ASTRONOMICAL OBSERVATIONS

MADE AT

THE HONORABLE THE EAST INDIA COMPANY'S OBSERVATORY AT MADRAS.

BY

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AND

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GREAT TRIGONOMETRICAL SURVEY OF INDIA 1869.

FOR THE YEARS 1848—1852.

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MDCCCLIV.

PREFACE.

The present volume embraces all the Observations made at the Madras Observatory since the departure of the late Astronomer T. G. Taylor, Esq., or for the years 1848—52 inclusive. The system pursued by my predecessor has been generally followed; viz., that the great mass of observations with the Meridional Instruments has been taken by the Native Assistants, it being found impossible in this climate, together with the general superintendence of two Observatories (celestial and magnetic) to undertake any continued series of observations. My observations with these instruments have therefore been limited to what was needful for occasional checks. I consider the work of the Assistants with the Mural Circle to be nearly if not quite equal to my own; with the Transit Instrument the inferiority is more perceptible, though still not very great. I have also followed my predecessor's plan in printing *results* only, on account of the voluminousness of the original observations; but exact copies in MS. of all the Observation-books will be deposited at the India House, and will doubtless be there accessible to all parties wishing to examine them.

The figure of Saturn in Plate 2 is a sad failure, but the best that the Madras Lithographers could produce after several attempts.

The hope held out in the last volume that this Observatory would soon possess an Equatorial, has been realized, not by the completion of the Instrument ordered the Court of Directors in 1842, which was not executed; but by the purchase of an Instrument originally ordered for private use. The observations with this instrument have been made exclusively by myself.

The Latitude given in the last volume has been reduced $0''\cdot1$ in accordance with the indications of the Solar Observations as given in that volume. The Longitude has been retained unaltered.

	°	′	″		h.	m.	s.
Latitude............	13	4	8·1	Longitude...........	5	20	57·3

Madras Observatory,
1st *December*, 1853.

W. S. JACOB,
H. C. Astronomer.

ERRATA.

Page.	*line or No.*	*for*	*read*
26	(7163)	Magnitude	7·7
37	line 3	L. C.	*n. p.*
73	287	*np* 6 Orionis	*np* σ Orionis
75	322	(N. P. D.) 113°	133°
76	351	ω Lupi	π Lupi
(3) } (4) }	heading	105	107
(5) to (13)	heading	106	107

ERRATA, LIST No. 2.

Page.		*line or No.*		*Column.*		*for*		*read.*
7	....	2939	....	9th (P.M.)	....	+·05	....	— ·05
8	....	3189	....	Do.	....	—·28	....	+ ·28
21	....	6328	....	Do.	....	—·03	....	+ ·03
37	....	5045	....	....	....	B.	....	L.C.
38	....	5370	....	....	....	$+\overset{s.}{0}\cdot30$	....	$-\overset{s.}{0}\cdot30$
39	....	5505	....	....	....	$-\overset{\prime\prime}{1}\cdot4$	....	$+\overset{\prime\prime}{1}\cdot4$
40	....	6481	....	....	....	+1·5	....	— 1·5
75	....	339	....	A.R.	....	—	....	$\overset{h.}{12}$
(20)	....	Equation 7	....	....	....	=1·75	....	=1·175

TRANSIT INSTRUMENT.

THIS Instrument having been frequently described, it will be sufficient to state that it has a focal length of $60^{in.}{\cdot}4$ and an aperture of $3^{in.}{\cdot}7$—but on my arrival at Madras in July 1849, I found the aperture of $2^{in.}$ almost exclusively employed. With a larger aperture, the brighter stars were disfigured by wings, shewing that the object glass was not exactly centered. The inconvenience of this being apparent, the centering was corrected between 16th and 19th November, by filing down two of the three brass pieces (mentioned in Vol. IV. by the late Mr. Taylor as) placed under the cell of the object glass, until stars of 1st magnitude gave a round image; since then the $2^{in.}$ aperture has been for the most part confined to Solar Observations.

The apparent difference of the pivots was found to be

on 16th December, 1849, $6''{\cdot}01$
19th March, 1850, $5{\cdot}51$
13th December, 1852, $5{\cdot}61$

the illuminating end being least; the correction used has been between the two first dates $3''{\cdot}00$, and subsequently to 19th March 1850, $2''{\cdot}78$: previously to the first date the old correction left by Mr. Taylor was used, viz. $1''{\cdot}80$. The level error, as will be evident from inspection of the Table is subject to great changes, the annual range sometimes exceeding $10''$, while a difference of $3''$ or $4''$ will frequently be found in the lapse of a few days, particularly after heavy rain. This is probably owing to the foundation for the Instruments resting not upon rock but sand, which in long continued rain becomes softened and allows the brick work to settle in a small degree. In consequence of injuries sustained by the setting circle on the other side, the Instrument can be used only with the illuminating end W., but the practice has been to invert the axis about the middle of every month and examine the collimation; and, as long as the micrometer was in order, to measure the distance of the central wire from the meridian mark in both positions, and thus determine the collimation error; latterly the micrometer having become unserviceable, I have adjusted for collimation whenever the error has appeared to exceed $1''{\cdot}0$, but this has been a rare occurrence.

The Azimuth has been determined throughout by the Transits of circumpolar stars; *both* Transits of Polaris have been taken when practicable, but by reason of its low altitude this can be done during only a small portion of the year.

The equatorial intervals of the four outer wires from the central one I found to be on 4th November 1849, by 93 Transits of stars

$55^{s}{\cdot}14$	agreeing very nearly with the values determined by my predecessor* on 16th
27·67	March and implying a correction to reduce the mean of the five to the centre,
27·17	amounting to $+\ 0^{s}{\cdot}18 \times$ sec. dec.
54·76	

In adjusting the centering of the object glass and re-adjusting collimation, a small change was produced, and the intervals were re-determined by 34 Transits as follows:—

$55^{s}{\cdot}21$
27·67
27·23
54·82

* Intervals on 1st January, 1848, { $54^{s}{\cdot}91$, 27·13, 27·23, 54·75 } And after putting in a new set of wires on 16th March, 1849, { $55^{s}{\cdot}15$, 27·69, 27·15, 54·76 }

so that the mean requires a correction of $+\overset{s.}{0}{\cdot}17 \times$ sec. dec.—applicable from 19th November 1849 to 4th March 1850. By the latter date the micrometer plate having, in spite of frequent cleanings, become stiff in its motion and nearly useless, and the intervals between the wires, being found inconveniently large, two wires were affixed to the micrometer plate, and set nearly midway between 2d and 3d, and 3d and 4th wires, and the use of the old 1st and 5th was discontinued.

The intervals were then determined as below:—

s.
27·66
13·47
13·86
27·30

The mean of 5 therefore requires a correction of only $-\overset{s.}{0}{\cdot}01 \times$ sec. dec.—which was neglected. On 12th October 1850, the 1st wire was gone; after inserting a fresh one, the intervals were found

s
27·24
13·68
13·56
27·46

implying a correction of $-\overset{s.}{0}{\cdot}02 \times$ sec. dec.—which was neglected.

About 12th November the values were again ascertained and found as follow

s.
27·22
13·68
13·52
27·42

requiring no correction.

About 5th February 1851, an inequality was noticed and the values were found to be

s
27·13
14·05
13·16
27·45

And after adjustment on the 10th February the values were

s
27·13
13·76
13·45
27·45

In the latter part of March the wires had again shifted and the intervals were found

s.
27·24
14·30
13·00
27·48

and after adjustment on the 26th March,

s.
27·24
13·72
13·48
27·48

on 19th April they were again found to be

s.
27·25
13·73
13·50
27·42

on 12th September the first wire was found broken and a new one inserted, when the values were found to be

s.
27·34
13·66
13·60
27·34

and after adjustment on 18th September

s
27·35
13·59
13·63
27·32

On 11th January 1852 the 4th wire was found slack, and a new pair were fixed on the micrometer plate, after which the values were

s
27·39
14·03
13·76
27·58 implying a correction of + ·016 × sec. dec.—which was neglected; these values were used until 1st October when a change being suspected the values were ascertained to be between that date and 10th December

s.
27·40
14·42
13·35
27·57 requiring a correction of + ·18 × sec. dec.

after adjustment on 10th December the values were

s.
27·32
14·05
13·70
27·60

The power used throughout the observations, as measured by a dynameter, has been 109, hitherto erroneously called 150.

The Instrument having been in use upwards of twenty years, is nearly worn out, and it will be desirable ere long to have its place supplied by one of greater power. Besides the defective state of the micrometer and of one of the setting circles alluded to above, the Ys are much worn away, and from the comparison of the right ascensions of standard stars with the Greenwich determinations, the pivots would also appear to have worn unequally.

In observing the sun, a light screen has been used since October 1849, to protect the axis from the sun's rays.

CLOCK ERRORS AND RATES.

The amount of these, as stated in the Table, has been corrected for personal equation, which was carefully ascertained for each observer, but as it was doubtful if the value of this continued quite permanent, it was but rarely employed in correcting the places of the stars, the plan adopted by Mr. Taylor being followed out, of deducing when practicable the clock error for each observer separately from his own Observations of Standard Stars, three of which were usually taken in each watch of three hours; the Standard Stars adopted being all the Nautical Almanac Stars within 30° of the equator, excepting a few which were considered doubtful, because of their places in the N. Almanac differing widely from those determined at this Observatory.

MURAL CIRCLE.

The circle having been frequently described, it will be sufficient to state that its diameter is 48; the Telescope has a focal length of 48·6 in. and an aperture of 3·6 in.; and a power of 97 (hitherto erroneously called 120), has been constantly used in observations of the heavenly bodies, the power employed with the Reflecting Collimator being about 60.

In determining the Index Error, those Nautical Almanac Stars were used which passed within 30° of the zenith, Sirius only being excluded, as being very near the limit and having also a large and somewhat uncertain proper motion. The mean Polar distances employed have been those given in Vol. VII. of this Observatory as the result of observations from 1843 to 1847 inclusive, with a correction of 0″·1, by which the latitude hitherto employed requires to be diminished, as appears both from the Solar Observations, and a comparison with the Greenwich Observations of the Standard Stars.

REVISION OF THE B. A. CATALOGUE.

This is a work which I had planned before arriving at Madras and was commenced in August 1849, it was considerably advanced before I was aware that my esteemed friend, the Astronomer at the Cape, was engaged in a similar revision.

The stars selected for Observation were, all those numbers in the B. A. Catalogue, between the N. P. D. of 40° and 155°, which depended on one modern observer, or which were otherwise doubtful; a few have been taken beyond these limits, especially to the northward; and a few of those previously well determined have been re-observed, generally from having been mistaken for some missing number in the neighbourhood. The numbers reported as "not seen," are in the course of being re-examined, they appear for the most part to be duplicate observations of another number with errors of 1^{m} or 1° or something of the kind.

It was intended to take four observations of each star, and this has been accomplished excepting where the stars came too *thickly* to allow of its being done within a reasonable time, or where a wrong star has been observed and the mistake not detected till the time of reduction. The great majority of these observations were taken by the Native Assistants, and may be considered creditable to them, as shewn by the general close agreement with former observers, especially Groombridge; by way of check, I have occasionally taken a turn at the Transit Instrument and, more rarely, at the Circle.

I have continued to employ Atkinson's Refractions as used by my predecessor, for the following reasons; the Native Assistants being used to the Table, I thought it undesirable to introduce a change unless it could be *proved* to be for the better; now, though Atkinson's Refractions differ but slightly from Bessel's, they appear to be rather more correct, at least in this latitude, since a comparison of the Polar distances of Standard Stars, as observed here and at Greenwich, shews, in the case of stars passing N. of both zeniths, a mean difference of only 0″·01; i. e. Atkinson's Refractions, at zenith distances from 38° to 76°, are equally good with Bessel's (used at Greenwich) from 0° to 38°; a similar comparison of the stars passing S. of both zeniths as far as 76° of zenith distance at Greenwich, shews a difference of 1″·16; (Greenwich Stars S.) those below 65° shew a difference of 1″·32 and below 75°, 1″·65; so that Bessel's fail at low altitudes; probably they may be correct for low observations N. of the zenith, and yet not for those to the S. Since a *grazing* ray N. and S. will in high latitudes pass through strata of different temperatures, and therefore be differently refracted.

In the column of magnitudes I have given the mean result, to the nearest tenth, of all the different estimations as entered in the Transit and Circle books, but do not attach much value to them; those assigned to the low southern stars, (say from 140° downwards) are certainly too low.

As much uncertainty still attaches to the amount of proper motions, I have not taken them into account in reducing the mean places to 1850; there was the less need for this, as the mean date of observation differs so very little from that epoch. The sole exception has been No. 4010, (1830 Groombridge) the proper motion of which being large and well established has been allowed for.

It will be seen from the notes, that many of the objects marked as nebulæ in the B. A. C. are loose cluster of stars; it is probable that these were not resolved by Lacaille's Instrument, and that he therefore observed the centre or brightest portion of the cluster; Brisbane or other subsequent observer would take a particular star in the cluster, and a comparison of the observations might indicate a large proper motion without any real foundation. In the cases where a conspicuous star could be selected in such a cluster, it has been observed; but many have had to be passed over, from the impossibility of identifying the object observed at the Transit with that at the Circle; for such cases the great advantage of a *Transit Circle* is most evident.

EQUATORIAL INSTRUMENT.

The Equatorial is by Lerebours and Secretan of Paris, and was originally ordered for private use and afterwards purchased by the Government. It reached Madras on 22d March, 1850, and was erected and in use by 12th April. The Object glass at first furnished had an aperture of $6^{in}{\cdot}2$ and $86^{in}{\cdot}3$ focus: this was found not only ill-centered, but also to have several serious flaws and striæ round the edge, preventing the use of a larger aperture than 4^{in} excepting on very faint objects; and all the observations are to be understood as taken with that aperture, unless otherwise noted. On these defects being represented to the makers, they very readily engaged to furnish another Object glass, the making of which was to occupy six months, but it was not actually received here until 23d July, 1852. All the observations now given, with the exception of a few specially noted, were therefore taken with the old lens. The new lens has the same aperture as the old, but a focal length of $88^{in}{\cdot}64$, and is nearly perfect, clearly dividing ϵ Arietis and τ Ophiuchi, and perceptibly elongating B of γ Andromedæ: shewing also distinctly six stars in the trapezium in Orion as in the annexed diagram.

The Telescope is mounted somewhat like the Great Northumberland at Cambridge, in a cage of strong brass tubes forming the polar axis, with a flat brass bar by way of polar rod. The hour circle is of 13^{in} and declination circle 14^{in} diameter, the one reading to 5^{s} by one vernier, and the other to $30''$ by two; but single seconds in the one case and $10''$ or even $5''$ in the other, can easily be read by estimation. The angle between the transverse axis of the Telescope and the polar axis differs from 90° by $1'\ 45''$; the inclination being such as to increase observed right ascensions, with face East and in North declination, and vice versa. There is a driving clock of the German construction, the regulating power of which consists in the friction, within a conical brass box, of two steel balls attached to slender springs and turning on a spindle, and the rate is varied by raising or depressing the spindle, so as to cause the balls to rub at a wider or narrower part of the cone; it performs its work pretty well when clean, but requires frequent cleaning.

The micrometer furnished by the maker is of rather inferior quality, the screws being coarse and sensibly unequal, while the planes, in which the wires move, are separated so far as to cause a perceptible parallax. The position circle is less than 2^{in} in diameter, which renders it rather troublesome to read, though the division is sufficiently accurate; the powers furnished were very low, ranging according to the maker's statement from 75 to 240, but as measured by a Dynameter, from 53 to 200; the Object glass of an Achromatic Microscope has occasionally been used giving a power of 340, and a Ramsden's eye-piece has lately been adapted giving with the new Object glass 293, but these are almost too great for the micrometer by reason of the parallax above-noticed. Two other micrometers (kindly lent by General Fraser) have also been used occasionally. These are designated in the observations as *Dollond's* and *Troughton's* Micrometers: the one with powers ranging to 600 and the other to 280. The value of one revolution of the screw of the former being $23''{\cdot}87$ and of the latter $23''{\cdot}28$; with the new Object glass these values become $23''{\cdot}23$ and $22''{\cdot}65$. In Lerebour's micrometer the value of screw A is $43''{\cdot}36$, and of B $43''{\cdot}50$; with the new Object glass $42''{\cdot}22$ and $42''{\cdot}35$; screw A was the one generally used: in the case of repetitions the mean of the two values has to be employed. These values were ascertained by numerous transits of stars of small polar distance; an attempt was made to ascertain if change of temperature affected the values of the screws; but it failed, as the alteration, if any, was much less than the error of observation, the range of temperature available being very small. Two Huygenian eye-pieces were furnished by the maker, with powers of 300 and 400.

The Instrument is mounted, on stout wooden tressels firmly braced, on the roof of the Astronomer's quarters, a very thick and solid terrace: the reason of placing it there was that, on account of high trees and buildings in the neighbourhood, an extensive view could be obtained from no other spot; it was intended in the first instance as an experiment, which has fully succeeded, as even when workmen have been employed about the walls, no tremors could be perceived in observing with high powers.

Instead of a rotatory roof, a folding one was erected, similar to that constructed at Poona and briefly described in the monthly notices of the Royal Astronomical Society for November 1843, which was also brought to the notice of the British

Association in 1850 by Professor C. P. Smyth. The roof is a truncated octagonal pyramid formed of eight separate frames of teak of the form shewn in Fig. 1. covered with canvas and painted, attached by hinges to eight horizontal beams arranged in an octagon and resting on eight posts, the walls between the posts being formed of weather boarding. Each frame opens independently, and when closed they mutually support each other, the edges being bevelled so as to fit correctly; the top is closed by an octagonal wooden shutter hinged to one of the frames, and which can be opened alone when observing very near the zenith; a plan and sectional elevation of the building are shewn at Fig. 2 and 3. For want of room within the building, one leg of each tressel has to pass outside of the walls, but these are carefully bordered round so as nowhere to come in contact with the tressels. The reasons for constructing such a roof in preference to a rotatory one were two-fold; the first was that of economy, the instrument being at the time private property, and consequently having to be erected at the expense of the Astronomer in the first instance, and it being also doubtful if the erection would be permanent, and the expense being about ¼ of that of the cheapest kind of rotatory roof; the second was, that from the situation it was expedient that the building erected should be as light as possible consistent with the requisite strength. It should be observed that the tressels supporting the polar axis stand over party walls, which give additional security, but it was found that even in the middle of the terrace neither a spirit level, nor even the reflection from the surface of mercury, were in the least affected by persons walking near them.

The following observations have been made on Saturn with the new Object glass.

24th August 1852, power 365, at day break. The inner faint ring was seen of a greyish tint, occupying about half the space between the bright ring and the planet; it could not be traced quite up to the planet. One dark line was also seen in the outer ring at each ansa, but not very distinctly. The shadow of the ring on the planet had a brownish tint: that of the planet on the ring was black and sharply defined—no belts were seen on Saturn excepting a broad bright band round the equatorial portion, the whole of the southern hemisphere being shaded over with a kind of mottled dun, almost uniformly, only a little darker near the pole; the inner edge of the bright ring was shaded off, but not quite evenly. On 22d September the appearances were much the same with power 277, except that the division of the outer ring was perhaps a little less distinct. On 27th October both the faint ring and outer division were seen with power 177; and with 277 the former could be traced up to and across the planet. Between 1st and 7th January 1853, 4 sets of measures were obtained with power 365 and 277, which are given in the Appendix, page 2, the mean results of which, reduced to Saturn's mean distance (9·5430, by Bouvard's Tables), are as follow:—

Outer diameter of outer ring, ...	39″·92
Diameter of fine division, ...	38·09
Inner diameter of outer ring, ...	35·46
Outer diameter of inner ring, ..	34·77
Inner diameter of inner ring, ...	26·55
Inner diameter of faint ring, ..	22·19
Equatorial diameter of Saturn, ..	17·86
Polar diameter of Saturn, ...	16·50

The broad division between the two old rings was not black but of an umber brown hue and the faint ring as seen across the planet had nearly the same hue, and a filmy appearance, and the planet's limb was seen through it as through a film of smoke. There was no suspicion of any other division in the outer ring besides the one above noticed and measured. Four Satellites have been frequently seen, but Japetus only on one or two occasions. On 5th January at about 2ʰ 10ᵐ Sidereal time Tethys became faint and disappeared, being most probably eclipsed: the time not very exact, it was then just opposite the E. ansa, at 5ʰ it was seen again near Saturn's pole.

The planet has subsequently been examined from time to time with various powers, but no decided change has been perceptible in the appearance of either the faint ring or the outer division. The former never appears well defined at its inner edge, neither has its surface an uniform tint. Fig. 4 represents the planet as seen on 1st January, 1853.

ERROR OF LEVEL OF THE TRANSIT AXIS.

(Illuminating Pivot, West.)

Date.	L.—P.*	Means.
1848.	"	"
Jan. 3	2·17 W.	1·14 W.
6	1·60	P = 1·80
10	0·34 E.	L = 2·94 W.
		"
13	2·86 E.	2·90 E.
17	2·95	P = 1·80
		L = 1·10 E.
20	4·22 E.	
24	4·35	
27	5·89	
28	I cleaned the	Level Instrument.
31	4·59 E.	
Feb. 3	4·45	"
7	5·77	5·09 E.
12	5·95	P = 1·80
16	5·38	L = 3·29 E.
19	5·18	
23	5·67 E.	
27	6·39	
Mar. 2	5·94	
7	4·45	"
11	4·78	5·30 E.
15	4·87	P = 1·80
18	4·84	L = 3·50 E.
22	5·49	
26	5·11 E.	
30	5·04	
April 2	Inverted the	Axis.
2	4·15 E.	
7	5·39	
11	4·89	
14	4·00	
16	4·66	
19	3·99	
24	3·97	
	Heavy rain and 27th.	loud thunder on the
28	5·10 E.	"
		4·72 E.
May 3	5·60	P = 1·80
		L = 2·92 E.
	Adjusted the	Level. "
3	6·55 E.	6·03 E.
22	5·72	P = 1·80
26	5·81	L = 4·23 E.
June 1	7·17 E.	

Date.	L.—P.	Means.
1848.	"	
June 4	6·62 E.	
7	6·78	
10	5·00	
13	5·47	
20	6·84	
27	7·19	
30	5·96	
July 4	6·70	
9	6·72	
16	Inverted the	Instrument.
16	7·96 E.	
20	6·17	
26	Adjusted the ble within	Level to bring the bub- the scale.
26	6·46 E.	"
		6·57 E.
Aug. 1	6·54	P = 1·80
7	6·98	L = 4·77 E.
15	7·45 E.	"
22	6·04	6·42 E.
30	6·12	P = 1·80
		L = 4·62 E.
Sept. 5	6·05	
	Inverted the	Axis.
6	6·00 E.	
11	5·68	
14	8·15	
21	6·21	
26	7·02	
29	6·19	
Oct. 3	6·40	
7	6·00	
11	7·20	
16	7·62	6·80 E.
20	7·90	P = 1·80
27	7·19	L = 5·00 E.
30	8·75 E.	
Nov. 3	8·19	
7	7·40	
11	8·31	
12	Inverted the	Axis.
12	8·47 E.	
21	8·80	
25	6·88	
30	8·20	
Dec. 5	7·80	
12	7·32	7·86 E.
18	6·80	P = 1·80
23	7·41	L = 6·06 E.

Date.	L.—P.	Means.
1849.	"	
Jan. 2	5·43 E.	
8	6·60	
18	6·92	
24	7·65	
30	6·35	
Feb. 5	7·25	
9	6·80	
13	7·18	
17	7·40	
21	6·18	
25	5·90	
Mar. 1	6·89	6·67 E.
7	6·62	P = 1·80
10	6·23	L = 4·87 E.
15	Adjusted the	Level.
15	9·30 E.	
18	Inverted the	Axis.
18	9·40 E.	
22	8·20	
26	8·70	
29	8·02	"
		8·66 E.
Apr. 2	8·29	P = 1·80
5	8·74	L = 6·86 E.
9	6·85 E.	
13	7·51	
16	8·00	
20	7·49	
24	7·66	
26	8·65	
May 1	7·55	
5	7·27	
8	7·15	
12	6·85	
	Adjusted the ble within	Level to bring the bub- the scale.
16	7·64 E.	
18	7·13	
19	6·19	
20	7·07	
26	7·75	
30	8·26	
June 4	8·46	7·48 E.
8	7·32	P = 1·80
12	7·28	L = 5·68 E.
		"
16	10·11 E.	10·24 E.
21	10·70	P = 1·80
26	9·90	L = 8·44 E.

* L.—P. is the Level error as observed; i. e. the true inclination — difference of Pivots

ERROR OF LEVEL OF THE TRANSIT AXIS, *(Continued.)*

(Illuminating Pivot, West.)

Date.	L.—P.	Means.
1849.	"	
June30	7·52 E.	
July 2	6·70	
	Adjusted the	Level.
6	6·38 E.	
10	7·52	
14	7·40	
18	6·90	
	Heavy rain.	
24	4·96 E.	
30	6·99	
Aug. 3	6·20	6·54 E.
8	5·50	P = 1·80
13	5·25	L = 4·74 E.
	Inverted the	Axis.
20	7·12 E.	
24	6·00 E.	
30	6·05	
Sept 4	5·80	
8	6·12	
12	5·62	
17	5·86	
22	5·80	
26	6·07	
		5·91 E.
Oct. 2	5·50	P = 1·80
8	6·25	L = 4·11 E.
13	9·32 E.	
15	9·14	
20	9·17	
24	8·87	
30	8·00	
Nov. 3	8·62	
10	9·12	
14	8·87	
17	8·30	
21	8·87	
26	8·25	
30	8·31	
Dec. 4	8·62	
8	8·12	
12	7·96	
16	Inverted the	Axis twice.
		"
16	8·57 E.	8·61 E.
20	8·86	P = 3·00
24	8·00	L = 5·61 E.
1850.		
Jan. 2	7·25 E.	
5	8·20	

Date.	L.—P.	Means.
1850.	"	
Jan. 9	8·67 E.	
16	7·98	
19	6·95	
25	7·25	
30	8·17	"
		7·83 E.
Feb. 2	7·98	P = 3·00
6	7·98	L = 4·83 E.
9	9·94 E.	
13	8·95	
16	9·90	
20	9·26	
23	8·65	
26	8·25	
Mar. 2	7·60	
5	8·87	
9	9·98	
12	8·55	
16	8·20	
19	Inverted the	Axis.
19	8·10 E.	
22	7·99	
26	8·32	
28	7·71	
Apr. 2	7·79	"
6	6·90	8·36 E.
10	6·94	P = 3·00
15	7·03	L = 5·36 E.
	Inverted the	Axis.
19	5·13 E.	
23	5·54	
26	5·60	
30	5·06	
May 4	6·37	
7	3·86	
11	5·12	
14	5·20	
	Inverted the	Axis. "
17	5·31 E.	5·42 E.
21	6·25	P = 3·00
26	6·15	L = 2·42 E.
30	3·30 E.	
31	3·52	
June 4	4·25	
5	5·22	
11	4·42	
15	6·12	
19	5·87	
22	5·35	
26	5·92	

Date.	L.—P.	Means
1850.	"	
June29	5·25 E.	
July 3	4·07	
9	4·87	
13	5·07	
17	5·30	
22	5·55	
27	5 63	"
30	5·80	5·08 E.
		P = 3·00
Aug. 3	5·95	L = 2·08 E.
		"
7	5·00 E.	5·44 E.
10	6·25	P = 3·00
13	5·07	L = 2·44 E.
	Adjusted the	Level.
17	5·54 E.	
	Inverted the	Axis.
		"
19	4·94 E.	5·47 E.
23	6·18	P = 3·00
27	5·22	L = 2·47 E.
		"
31	4·76 E.	4·51 E.
Sep. 3	4·80	P = 3·00
7	3·97	L = 1·51 E.
		"
10	6·95 E.	6·23 E.
12	5·89	P = 3·00
16	5·85	L = 3·23 E.
20	5·25 E.	
24	4·58	
28	5·62	"
		5·12 E.
Oct. 1	5·27	P = 3·00
5	4·90	L = 2·12 E.
8	4·55 E.	
11	4·35	
15	4·75	
19	5·40	"
22	4·75	4·69 E.
25	4·67	P = 3·00
28	4·38	L = 1·69 E.
Nov. 1	5·16 E.	
5	5·65	
9	4·92	"
14	5·35	5·42 E.
18	6·02	P = 3·00
21	5·42	L = 2·42 E.

ERROR OF LEVEL OF THE TRANSIT AXIS, *(Continued.)*

(Illuminating Pivot, West.)

Date.	L.—P.	Means.
1850.	″	
Nov. 25	6·90 E.	
29	6·95	
Dec. 2	7·37	
5	6·52	
9	6·07	
13	7·00	
17	6·50	″
20	6·32	6·65 E.
24	6·17	P = 3·00
28	6·67	L = 3·65 E.
1851.		
Jan. 2	5·92 E.	
6	5·60	
8	6·12	
12	5·75	″
15	5·60	5·84 E.
19	5·72	P = 3·00
23	6·20	L = 2·84 E.
27	7·02 E.	
30	6·52	
Feb. 7	6·90	
11	6·54	
15	5·96	″
19	6·12	6·57 E.
22	7·75	P = 3·00
26	5·72	L = 3·57 E.
Mar. 1	5·75 E.	
5	5·85	
8	5·45	
12	5·27	
17	5·30	
19	Inverted the	Axis. ″
19	5·47 E.	5·50 E.
22	5·27	P = 2·78
27	5·63	L = 2·72 E.
31	3·77 E.	″
		3·92 E.
April 5	4·61	P = 2·78
12	3·37	L = 1·14 E.
17	3·00 E.	
22	2·30	″
26	2·87	2·56 E.
		P = 2·78
May 1	2·05	L = 0·22 W.
6	5·94 E.	Heavy rain and gale during the last 3 days.

Date.	L.—P.	Means.
		″
		5·79 E.
1851.	″	P = 2·78
May 9	5·64 E.	L = 3·01 E.
14	4·25 E.	
	Inverted the	Axis.
16	4·44 E.	
20	3·54	
23	3·50	
26	4·15	″
30	3·42	3·75 E.
		P = 2·78
June 3	2·98	L = 0·97 E.
11	3·64 E.	
16	2·62	
	Inverted the	Axis.
17	2·74 E.	
21	3·75	
26	2·20	
July 1	3·32	
4	2·92	″
8	4·05	3·24 E.
11	3·78	P = 2·78
15	3·38	L = 0·46 E.
	Inverted the	Axis.
19	4·12 E.	
22	3·55	
26	4·12	
30	4·00	″
		3·98 E.
Aug. 6	3·62	P = 2·78
11	4·47	L = 1·20 E.
16	5·77 E.	
19	5·20	
26	5·90	″
		5·57 E.
Sep. 3	5·85	P = 2·78
6	5·13	L = 2·79 E.
10	6·88 E.	
	Inverted the	Axis.
		″
		6·78 E.
		P = 2·78
17	6·67 E.	L = 4·00 E.
20	2·45 E.	
25	4·02	
27	3·50	
Oct. 4	4·20	
9	4·50	
11	4·02	
16	3·20	

Date.	L.—P.	Means.
1851.	″	
Oct. 18	3·55 E.	″
22	3·82	3·62 E.
25	3·57	P = 2·78
30	2·90	L = 0·84 E.
Nov. 7	6·30 E.	Heavy rain during the last 5 days.
		″
11	4·41	6·16 E.
17	7·58	P = 2·78
20	6·37	L = 3·38 E.
24	4·72 E.	
28	3·94	
Dec. 3	4·02	″
6	4·30	4·18 E.
13	4·12	P = 2·78
17	4·00	L = 1·40 E.
1852.		
Jan. 2	4·40 E.	
	Inverted the	Axis.
6	5·33 E.	
11	3·72	
15	4·30	
19	3·60	
23	3·69	
26	3·89	
30	4·15	
Feb. 4	5·00	
7	5·12	
11	3·15	
14	4·12	″
19	3·92	4·12 E.
25	4·00	P = 2·78
28	3·37	L = 1·34 E.
Mar. 3	2·96 E.	
6	2·55	
11	2·95	
16	2·93	
19	3·22	
23	3·75	
26	3·61	
30	2·20	
April 2	2·92	
6	2·82	
9	2·60	″
13	1·75	2·76 E.
16	1·80	P = 2·78
20	2·62	L = 0·02 W.

ERROR OF LEVEL OF THE TRANSIT AXIS, *(Continued.)*

(Illuminating Pivot, West.)

Date.	L.—P.	Means.
1852.		
	Inverted the	Axis
	″	
Apr. 24	*0·87 E.	
28	2·10	
May 3	1·50	
6	1·67	
10	1·70	
14	1·67	
18	2·22	
22	2·42	
27	2·05	
31	2·30	
		1·98 E.
June 5	2·25	P = 2·78
12	1·87	L = 0·80 W.
	Inverted the	Axis.
17	3·12 E.	
21	4·00	″
26	3·25	3·34 E.
		P = 2·78
July 1	2·98	L = 0·56 E.
4	1·75 E.	
7	1·70	
11	2·60	
15	2·60	
	Inverted the	Axis. ″
18	1·48 E.	2·03 E.
		P = 2·78
		L = 0·75 W.

Date.	L.—P.	Means.
1852.	″	
July 23	4·68 E.	Heavy rain and loud thunder on the 22d.
27	3·62	
29	3·50	
Augt. 4	4·00	
9	5·70	
14	3·00	
	Inverted the	Axis. ″
		4·15 E.
		P = 2·78
21	4·54 E.	L = 1·37 E.
		″
		6·43 E.
25	6·85 E.	P = 2·78
28	6·00	L = 3·65 E.
Sept. 1	4·20 E.	
4	2·60	
8	2·70	
11	3·07	
15	3·20	
	Inverted the	Axis.
18	4·71 E.	
22	3·97	
26	3·62	
		″
Oct. 1	3·60	3·37 E.
4	2·95	P = 2·78
11	2·50	L = 0.59 E.

Date.	L.—P.	Means.
1852.	″	
Oct. 16	3·37 E.	
20	4·00	
28	4·00	
Nov. 2	3·00	
6	4·71	
10	4·65	
15	4·57	
19	4·35	
24	3·42	
27	3·30	
		″
		3·89 E.
		P = 2·78
Dec. 4	3·45	L = 1·11 E.
11	1·50 W.	
13	Found the loose; tighten	screw of level plate ed it.
13	Inverted the	Axis.
		″
		2·09 W.
		P = 2·78
13	2·69 W.	L = 4·87 W.
	The long con haps caused a dation.	tinued rain has per- settlement in the foun-
20	0·17 E.	

* Omitted in taking the Mean.

Date.	Azimuth.	
1848.	″	
Jan. 3	3·50 E.	
4	2·50 "	
5	3·00 "	
6	2·50 "	
7—9	3·00 "	
10	4·50 "	Found the Azimuth and Collimation adjustment both in error—corrected them.
11—12	1·00 E.	
13	1·50 "	
14—20	1·00 "	
21—29	1·50 "	
Jan. 30 to Feb. 2	2·00 "	
3		Inverted the Axis to correct for a small deviation of the centre wire to the *West* in Azimuth.
3—9	0·50 E.	
10—16	1·00 "	
17		Inverted the Axis for the examination of the Collimation error C = 0″·0.
17—19	1·00 E.	
20—21	2·00 "	
22	1·50 "	
23—24	1·00 "	
Feb. 25 to Mar. 4	1·50 "	
"		Inverted the Axis—corrected for a deviation of about 1″ to the East of the Meridian and found the Collimation adjustment perfect.
4—16	0·50 E.	
"		Inverted the Axis, when the Collimation appeared perfect.
Mar. 17 to April 1	0·50 E.	
2		Inverted the Axis and found the Collimation good.
3—15	1·00 E.	
16		Inverted the Axis—slight deviation *apparently* to the West, but bisected perfectly on re-inversion. The Transit Axis has a slight lateral play between the Ys.

Date.	Azimuth.	
1848.	″	
Apr. 17—29	1·50 E.	
Apr. 30 to May 3	2·50 "	
"		Inverted the Axis—Collimation good.
4—9	3·50 E.	
10	2·00 "	
11—13	2·50 "	
14—16	3·00 "	
"		Inverted the Axis—Collimation good.
17–20	3·00 E.	
May 21 to June 4	2·50 "	
"		Inverted the Instrument—Collimation good—Mark wavering.
5—6	3·50 E.	
7	4·00 "	
8—19	3·00 "	
"		Inverted—Collimation correct.
June 20 to July 3	4·50 E.	
4—16	4·00 "	
"		Inverted the Instrument—Collimation correct.
July 26 to Aug. 4	3·50 E.	
"		Inverted the Instrument—Collimation correct.
5—16	3·50 E.	
18		Found the deviation in Azimuth about ½ second *apparently* to the *West*, corrected it, Collimation good; mark is rather unsteady.
Sept. 6		Inverted the Axis—Collimation good.
Sept. 20 to Oct. 7	2·00 E.	
10—17	1·50 "	
18—20	2·00 "	
21—23	2·50 "	
Oct. 24 to Nov. 7	2·00 "	
9		Wires appear bent, owing to the dampness of the air, centre wire *appears* about 2 seconds to the *East*.

Date.	Azimuth.	
1848.		
Nov. 12		Inverted the Instrument, centre wire left in the same state.
	″	
10—18	1·50 W.	
19—25	2·00 "	
Nov. 29 to Dec. 4	5·00 "	
"		The mark is not bisected, but the wires appear bent by the dampness of the atmosphere.
5—31	5·00 W.	
1849.		
Jan. 1—8	2·50 W.	
9—19	3·50 "	
20—24	3·00 "	
25—26	2·50 "	
27—29	2·00 "	
30—31	1·00 "	
Feb. 1	1·50 "	
2	2·50 "	
3—5	3·00 "	
6—10	2·00 "	
11—13	1·50 "	
14	1·00 "	
15—16	2·50 "	
17—21	2·00 "	
22—23	1·00 "	
24	1·50 "	
25—26	1·00 "	
Feb. 27 to Mar. 3	0·50 "	
4—7	1·50 "	
8	0·00	
9—10	0·50 W.	
11—12	0·00	
13—15	2·00 W.	
16—18	0·50 E.	
18		Examined the adjustment and corrected it for a SMALL deviation in Azimuth and Collimation.
19—22	0·50 E.	
Mar. 23 to Apr. 5	1·00 "	
6—15	1·50 "	
16—18	1·00 "	
19—25	0·00	
26—27	0·50 E.	
28—30	1·00 "	
May 1—3	2·00 "	
4—9	2·50 "	
10—16	2·00 "	
17—18	3·50 "	
19—26	2·00 "	

Date.		Azimuth.	Star observed.
1849.		″	
May 27 to June 6		2·50 E.	
	7—26	3·00 ,,	
	,,	Inverted the Instrument when the Collimation adjustment appeared perfect.	
July	6	2·0 E.	ζ Ursæ Min.
	9	1·7 ,,	ζ ,, ,,
	10	0·8 ,,	ε ,, ,,
	11	0·1 ,,	ζ ,, ,,
	,,	0·9 W.	ε ,, ,,
	12	0·6 ,,	ε ,, ,,
	,,	1·9 E.	δ ,, ,,
	13	2·0 ,,	ζ ,, ,,
	,,	0·1 W.	ε ,, ,,
	14	2·1 E.	ζ ,, ,,
	,,	0·3 W.	ε ,, ,,
	,,	1·9 E.	δ ,, ,,
	16	0·4 ,,	ε ,, ,,
	,,	1·5 ,,	δ ,, ,,
	20	2·0 ,,	ε ,, ,,
	21	1·0 ,,	ε ,, ,,
June 27 to July 31		0·97 E.	
August	9	0·9 E.	δ ,, ,,
	10	1·2 ,,	δ ,, ,,
	11	0·6 W.	δ ,, ,,
	15	At 19^h Inverted the Transit in its Ys; before inversion the Micrometer set on the Δ of the Meridian mark read— R. d. 1 09 0 wire E of mark; After inversion, 1 11 0 do. do; Again, 1 10·0; After reversion 1 09 5; 0 00 6 error of Collimation W. or 0·018^s in time.	
August	16	1·0 E.	α Ursæ Min.
	17	2·0 ,,	α ,, ,,
	18	0·5 ,,	δ ,, ,,
	20	0·9 W.	δ ,, ,,
	21	0·4 E.	δ ,, ,,
	,,	0·4 ,,	α ,, ,,
	22	0·7 ,,	δ ,, ,,
	,,	0·7 ,,	α ,, ,,
	1—31	0·57 E.	
Sept.	19	Inverted Transit: with L.E the Δ mark reads R. 1 d. 16 0; L W ,, ,, 1 14 0; error of Collimation W. 0 1·0 = 0·02^s	
Oct.	13	1·8 E.	α Ursæ Min.

Date.		Azimuth.	Star observed
1849. Oct.	15	At 19^h Inverted Transit: Before inversion wire is E of Δ. R. 1 d. 15·2; After do. 1 13·0; Again do. 1 14 8; After reversion, 1 15 2; ∴ Error of Collimation is E 0 0·65 = 0·015^s	
	16	2·3 E.	δ Ursæ Min. S.P.
	17	1·5 ,,	α ,, ,,
	18	1·6 ,,	α ,, ,,
	19	1·0 ,,	α ,, ,,
	20	0·9 ,,	α ,, ,,
	22	1·6 ,,	α ,, ,,
	23	1·4 ,,	α ,, ,,
	24	0·0 ,,	α ,, ,,
	25	0·1 E.	α ,, ,,
	30	0·3 W.	α ,, ,,
	31	0·8 E.	δ ,, ,, S.P.
	13—31	1·06 E.	
Nov.	1	0·8 E.	α ,, ,,
	2	1·0 ,,	α ,, ,,
	3	0·6 ,,	α ,, ,,
	10	0·7 ,,	α ,, ,,
	13	0·3 ,,	α ,, ,,
	14	0·2 ,,	α ,, ,,
	18	Inverted Instrument: Before inversion Δ measures. R. 1 d. 07·6; After do. r. 1 d. 10 4; Again do. 1 10·2; After reversion. 1 07·6; ∴ The error of Collimation is 1·35^d W	
	19	Inverted Instrument when the wire appeared about its own breadth (= 0·10^s) E of mark; no measure could be taken as the movable wire *fiddles;* adjusted the Collimation by the screws.	
	20	1·0 E.	α Ursæ Min.
	,,	0·4 ,,	δ ,, ,, S.P.
	21	1·1 ,,	α ,, ,,
	22	0·9 ,,	α ,, ,,
	23	0·1 ,,	α ,, ,,
	24	0·5 W.	α ,, ,,
	28	1·1 E.	α ,, ,,
	29	1·0 ,,	α ,, ,,
	,,	2·4 ,,	α Ursæ Min. S.P.
	1—30	0·74 E.	
Dec.	2	1·7 E.	α Ursæ Min.
	3	0·0	α ,, ,,
	4	0·0	α ,, ,,
	10	1·5 E.	α ,, ,,
	,,	1·1 ,,	δ ,, ,, S.P.
	,,	1·9 ,,	α ,, ,, ,,

Date.		Azimuth.	Star observed.
1849.		″	
Dec.	11	0·5 E.	α Ursæ Min. S.P.
	12	0·9 ,,	α ,, ,,
	13	0·4 ,,	α ,, ,,
	14	2·5 ,,	α ,, ,,
	16	Inverted Transit: Before inversion Δ reads R. 1 d. 09·0; After do. 06·5; Again do. 07 9; After reversion 06·0; Consequently Collimation of middle wire is 0 15 E.	
	17	0·1 E.	α Ursæ Min. S.P.
	19	1·5 ,,	α ,, ,,
	21	0·4 ,,	α ,,
	27	0·5 ,,	ε ,,
	1—31	0·93 E.	
1850. Jan.	2	1·4 W.	α Ursæ Min.
	3	0·1 ,,	α ,, ,,
	15	Inverted the Transit.	
	16	1·4 E.	α Ursæ Min. S.P.
	18	1·3 ,,	δ ,, ,,
	,,	0·5 ,,	α ,, ,,
	25	1·2 ,,	δ ,, ,,
	26	1·0 W.	α ,,
	27	0·3 E.	α ,,
	29	0·3 ,,	α ,,
	1—31	0·27 E.	
Feb.	19	Inverted Instrument, found the middle wire out in Collimation about ½ its breadth to the East; did not alter it; the Micrometer wire *hangs,* and cannot be used.	
	21	1·0 E.	δ Ursæ Min. S.P.
	22	1·3 ,,	δ ,, ,, ,,
	23	0·7 ,,	δ ,, ,, ,,
	28	2·1 ,,	α Ursæ Min. ,,
	1—28	1·28 E.	
March	1	0·5 E.	51 Cephei.
	4	1·1 ,,	51 ,,
	5	0·5 ,,	51 ,,
	1—6	0·73 E.	
	7	0·5 W.	δ Ursæ Min. S.P.
	8	0·7 ,,	δ ,, ,, ,,
	,,	0·2 E.	51 Cephei.
	13	0·1 W.	51 ,,
	14	0·8 E.	51 ,,
	18	0·0 ,,	51 ,,

Date.		Azimuth.	Star observed.
1850.			
Mar.	18	Inverted Instrument on new mark—Collimation found perfect.	
		s	
	19	0·5 E.	51 Cephei.
	20	0·4 "	δ Ursæ Min. S.P.
	"	0·4 W.	51 Cephei.
	22	1·2 E.	δ Ursæ Min. S.P.
	"	0·6 W.	51 Cephei.
	23	1·4 E.	δ Ursæ Min. S.P.
	"	1·4 "	51 Cephei.
	25	0·2 W.	"
	26	0·3 "	"
	27	0·0	"
	7—31	0·19 E.	
April	8	1·7 E.	α Ursæ Min. S.P.
	11	2·0 "	α " "
	1—13	1·85 E.	
	15	3·0 E.	α " "
	16	Inverted the Instrument; found Collimation perfect.	
	17	3·8 E.	α Ursæ Min. S.P.
	18	3·5 "	α " "
	20	2·6 "	α " "
	23	1·6 "	α " "
	25	3·5 "	δ Ursæ Min.
	29	4·0 "	δ "
	30	3·5 "	δ "
	14—30	3·12 E.	
May	1	3·4 E.	α Ursæ Min. S.P.
	3	3·6 "	α " "
	4	4·0 "	α " "
	6	2·8 "	δ Ursæ Min.
	"	1·8 "	51 Cephei S.P.
	9	1·5 "	δ Ursæ Min.
	11	4·0 "	α Ursæ Min. S.P.
	13	3·8 "	α " "
	14	2·7 "	α " "
	16	At 20h Mean Time inverted the Transit: the Collimation appeared perfect.	
	17	2·9 E.	α Ursæ Min. S.P.
	18	2·3 E.	α " "
	19	At 22h 30m observed that the wire had shifted on the North mark. Inverted Instrument and found Collimation correct. The pillar has perhaps received a blow. The change is very small about 1″·5. The wire is now exactly on the central mark.	

Date.		Azimuth.	Star observed.
1850.		s	
May	21	3·2 E.	α Ursæ Min. S.P.
	30	2·4 "	α " "
	31	1·3 "	ε Ursæ Min.
	1—31	2·84 E.	
June	3	3·5 E.	α Ursæ Min. S.P.
	8	3·1 "	α " "
	16	Inverted Axis and found the Collimation correct.	
	20	2·9 E.	δ Ursæ Min.
	21	2·9 "	δ "
	29	3·8 "	δ "
	1—30	3·24 E.	
July	6	0·00	ε Ursæ Min.
	8	1·5 E.	ε "
	10	1·0 "	ε "
	17	Inverted Axis, found the Collimation erroneous by half the breadth of the middle wire=0s·05 to the east. Left it so.	
	29	3·5 E.	δ Ursæ Min.
	30	3·0 "	δ "
	1—31	1·80 E.	
Augt.	6	1·8 E.	
	18	Inverted Instrument; found the Collimation perfect.	
	31	2·6 E.	δ Ursæ Min.
Sept.	17	Inverted Instrument and found the error of Collimation half the breadth of the wire=0s·05 East.	
Oct.	9	1·6 E.	α Ursæ Min.
	11	The 1st wire was gone; took out diaphragm and inserted a fresh silk line and re-adjusted the Collimation, inverting the Instrument for the purpose; it is not known how the accident occurred.	
	12	2·3 E.	α Ursæ Min.
	14	1·9 "	"
Augt. 1 to Oct. 25		2·04 E.	

Date.		Azimuth.	Star observed.
1850.		s	
Oct.	26	0·1 W.	α Ursæ Min.
	29	0·7 "	"
	30	0·5 "	"
Nov.	2	0·00	"
	11	Inverted the Instrument and found the error of Collimation half the breadth of the wire = 0s·05 West.	
	13	0·00 W.	α Ursæ Min.
	14	0·9 "	"
	18	0·8 "	"
	19	1·0 "	"
	20	0·8 "	"
	22	1·2 "	"
	23	1·5 "	"
	25	1·1 "	"
	27	1·4 "	"
	28	2·0 "	"
Dec.	4	0·6 "	"
	5	1·1 "	"
	7	1·0 "	"
	8	1·6 "	"
	10	0·8 "	"
	11	1·4 "	"
	12	1·3 "	"
	13	1·1 "	"
	14	2·3 "	"
	15	1·1 "	"
	16	1·6 "	"
	17	1·6 "	"
	"	Inverted the Axis and found Collimation perfect.	
	19	2·0 W.	α Ursæ Min.
	20	1·9 "	"
	21	2·6 "	"
	22	0·4 "	"
	23	0·9 "	"
	27	1·1 "	"
Oct. 26 to Dec. 31		1·14 W.	
1851.			
Jan.	2	1·1 W.	α Ursæ Min.
	"	0·6 E.	δ " S.P.
	"	0·5 W.	51 Cephei.
	3	1·5 "	α Ursæ Min.
	4	1·4 "	α "
	"	1·7 "	δ " S.P.
	6	0·4 "	α "
	8	0·8 "	α "
	10	0·2 "	δ " S.P.
	"	0·2 E.	51 Cephei.
	11	0·3 W.	δ Ursæ Min. S.P.
	"	0·7 E.	51 Cephei.
	13	1·4 W.	α Ursæ Min.

Date.		Azimuth.	Star observed.
1851.		″	
Jan.	14	0·6 W.	δ UrsæMin.S.P.
	"	0·4 E.	51 Cephei.
	15	0·6 W.	δ UrsæMin.S.P.
	16	1·1 "	α "
	"	Inverted Instrument, and found the error of Collimation half the breadth of the wire = 0″·05 East.	
	17	0·6 W.	α Ursæ Min.
	18	1·3 "	α "
	20	0·4 "	α "
	"	0·3 E.	δ " S.P.
	"	0·0	51 Cephei.
	21	0·2 W.	α Ursæ Min.
	22	0·9 "	δ " S.P.
	24	0·2 "	α "
	25	0·7 "	α "
	27	0·1 E.	α "
	28	0·6 "	51 Cephei.
	29	0·2 W.	δ UrsæMin.S.P.
	"	0·2 "	51 Cephei.
	30	0·2 "	51 do.
	31	0·2 "	δ UrsæMin.S.P.
	"	0·6 "	51 Cephei.
Jan.	1—31	0·44 W.	
Feb.	6	1·8 E.	α UrsæMin.S.P.
	7	1·8 "	α " "
	9	2·3 "	α " "
	10	2·2 "	α " "
	11	1·8 "	δ " "
	"	3·2 "	α " "
	12	3·0 "	α " "
	13	3·1 "	δ " "
	14	1·9 "	δ " "
	"	3·3 "	α " "
	15	2·3 "	δ " "
	16	Inverted Instrument and found error of Collimation one breadth of the wire (= 0″·10) East. Corrected it by the screw.	
	19	1·1 E.	δ UrsæMin.S.P.
	"	1·1 "	α " "
	20	0·7 "	δ " "
	"	1·2 "	α " "
	21	2·1 "	δ " "
	22	1·3 "	δ " "
	1—22	2·01 E.	
	24	0·3 W.	δ " "
	25	0·2 E.	" "
	26	0·7 "	" "
	27	0·0	" "

Date.		Azimuth.	Star observed.
1851.		″	
Feb.	28	0·1 W.	δ UrsæMin.S.P.
	23—28	0·01	
Mar.	1	0·6 W.	δ " "
	3	0·7 "	" "
	4	0·9 "	" "
	5	0·0	" "
	6	0·1 W.	" "
	10	0·0	" "
	12	1·8 E.	51 Cephei.
	14	0·9 "	"
	15	1·0 "	"
	16	Inverted the Axis and found the Collimation perfect.	
	17	0·2 E.	δ UrsæMin.S.P.
	"	0·1 W.	λ " "
	18	0·3 E.	δ " "
	"	0·1 W.	λ " "
	19	0·8 "	δ " "
	"	0·6 "	λ " "
	20	0·7 "	δ " "
	"	1·2 "	λ " "
	21	0·8 "	δ " "
	25	1·2 "	λ " "
	28	0·4 "	λ " "
	1—31	0·20 W.	
April	1	4·5 E.	δ Ursæ Min.
	2	3·8 "	"
	3	4·3 "	"
	4	3·8 "	"
	8	2·8 "	"
	9	4·5 "	"
	10	4·5 "	"
	16	1·7 "	"
	"	Inverted the Axis and found the Collimation correct.	
	22	3·8 E.	δ Ursæ Min.
	25	4·0 "	δ "
May	10	2·9 "	α " S.P.
	12	5·5 "	δ "
	14	4·3 "	δ "
	15	4·1 "	δ "
	"	Inverted the Axis; Collimation correct.	
	21	3·2 E.	δ Ursæ Min.
	28	3·4 "	δ "
April 1 to May 31		3·82 E.	

Date.		Azimuth.	Star observed.
1851.		″	
June	15	1·2 E.	α Ursæ Min.
	16	Inverted the Axis—no alteration in Collimation.	
	17	3·0 E.	α UrsæMin.S.P.
	18	0·5 "	" "
	23	1·3 "	"
	24	1·8 "	"
	"	1·7 "	" S.P.
	25	3·2 "	" "
	30	1·5 "	" "
	"	4·5 "	δ "
	"	1·3 "	α "
	1—30	2·00 E.	
July	1	0·8 E.	α UrsæMin.S.P.
	2	1·3 "	" "
	3	1·3 "	" "
	16	Inverted the Axis; Collimation not altered.	
	21	0·3 W.	δ Ursæ Min.
Aug.	18	Inverted Axis and found the error of Collimation half the breadth of the wire = 0″·05 West.	
Sept.	3	1·3 E.	δ Ursæ Min.
July 1 to Sept. 12		0·88 E.	
	13	2·9 E.	δ Ursæ Min.
	14	Inverted Axis and found error of Collimation about 1″ W. corrected it by the screw.	
	16	2·3 E.	51 Cephei.
	27	4·5 "	δ Ursæ Min.
Sept. 13 to Oct. 14		3·23 E.	
	14	Inverted Instrument and found the error of Collimation one breadth of the wire, i. e. 0″·10 East; corrected it by the screw.	
Oct.	15	1·2 E.	λ Ursæ Min.
	21	0·5 W.	α "
	24	0·1 E.	"
	24	1·8 "	" S.P.
	25	0·4 "	"
	28	0·1 W.	"
	30	0·6 "	"
	15—31	0·33 E.	

Date.		Azimuth.	Star observed.
1851.		″	
Nov.	7	3·2 W.	α Ursæ Min.
	17	5·7 "	"
	18	Inverted Axis and found error of Collimation ⅔ the breadth of the wire W. or about 1″·0.	
	19	4·9 W.	α Ursæ Min.
	20	4·9 "	"
	21	5·0 "	"
	22	5·0 "	"
			" S.P.
	24	4·8 "	"
	25	3·9 "	"
	28	3·5 "	"
			" S.P.
	1—30	4·54 E.	
Dec.	2	2·4 W.	α Ursæ Min.
	3	2·7 "	"
	4	3·2 "	" S.P.
	5	2·7 "	"
			" S.P.
	6	2·9 "	"
	8	2·8 "	"
	9	2·0 "	"
	10	3·2 "	"
	16	Inverted Axis and found error of Collimation one breadth of the wire W. or 1″·5; corrected it by the screw.	
	17	3·1 W.	α Ursæ Min. S.P.
	18	2·7 "	"
	19	2·5 "	"
	21	2·6 "	"
	22	2·3 "	"
	24	1·4 "	"
	29	2·9 "	" S.P
	1—31	2·63 W.	
1852.			
Jan.	1	1·5 W.	α Ursæ Min.
	2	1·9 "	"
	3	2·4 "	"
	5	Found the whole of the Transit wires broken as if by the insertion of a finger, put in a new set of silk lines; inverted Axis and adjusted for Collimation.	
	6	2·6 W.	α Ursæ Min.
	"	2·9 "	δ " S.P.
	7	1·6 "	α " "
1852.		″	
Jan.	8	3·8 W.	δ Ursæ Min. S.P.
	8	3·7 "	α "
	9	3·6 "	δ " S.P.
	10	2·3 "	δ " "
	12	2·0 "	α "
	"	3·0 "	δ " S.P.
	15	2·3 "	α "
	"	0·7 "	δ " S.P.
	16	2·2 "	α "
	"	0·8 "	δ " S.P.
	17	2·5 "	α "
	"	0·0	δ " S.P.
	21	2·7 W.	α "
	"	Inverted the Axis; Collimation unchanged.	
	22	3·0 W.	α Ursæ Min. S.P.
	24	2·0 "	α "
	26	2·6 "	δ " S.P.
	30	2·8 "	α "
	31	3·7 "	α "
	1—31	2·36 E.	
Feb.	2	2·3 W.	α Ursæ Min.
	"	4.1 "	δ " S.P.
	3	1·6 "	δ " "
	6	2·1 "	α "
	"	3·2 "	δ " S.P.
	7	2·9 "	α "
	"	3·0 "	δ " S.P.
	9	1·5 "	δ " "
	10	1·5 "	δ " "
	11	2·4 "	δ " "
	12	3·4 "	α "
	"	2·2 "	δ " S.P.
	13	2·3 "	δ " "
	14	2·3 "	α "
	"	2·6 "	δ " S.P.
	16	2·1 "	δ " "
	17	1·9 "	α "
	"	2·0 "	δ " S.P.
	21	2·3 "	δ " "
	23	2·0 "	δ " "
		Inverted the Axis; Collimation unchanged.	
	25	1·7 W.	δ Ursæ Min. S.P.
	26	2·4 "	" "
	27	1·9 "	" "
	28	1·3 "	" "
	1—28	2·29 W.	
Mar.	2	2·4 W.	δ Ursæ Min S.P.
	3	1·7 "	" "
	4	1·4 "	" "
1852.		″	
Mar.	5	1·1 W.	δ Ursæ Min. S.P.
	8	2·4 "	" "
	9	2·6 "	" "
	10	2·9 "	" "
	11	2·6 "	" "
	16	Inverted Axis; Collimation found correct.	
	20	2·8 W.	δ Ursæ Min. S.P.
	1—31	2·21 W.	
April	22	Inverted Axis and found the Collimation correct.	
	23	0·1 E.	α Ursæ Min. S.P.
	24	0·2 "	" "
	28	0·4 W.	" "
	29	0·6 "	" "
	1—30	0·25 W.	
May	8	0·8 E.	α Ursæ Min. S.P.
	16	Inverted Axis and found error of Collimation 0″·5 E.; left it so.	
	20	0·9 E.	α Ursæ Min. S.P.
	25	0·6 W.	" "
	26	0·8 E.	" "
	27	0·5 "	" "
	31	1·4 W.	" "
	1—31	0·17 E.	
June	1	0·2 E.	α Ursæ Min. S.P.
	2	0·2 W.	" "
	3	0·2 E.	"
	"	0·2 "	" S.P.
	4	0·6 W.	" "
	5	0·4 E.	" "
	7	0·0	" "
	8	0·2 W.	" "
	16	Inverted the Axis and found the Collimation correct.	
	1—30	0·00	
July	15	Inverted Axis; Collimation correct.	
	19	1·3 E.	α Ursæ Min.
Aug.	9	0·7 E.	"
	15	Inverted Transit and found Collimation correct.	

ERRORS OF AZIMUTH AND COLLIMATION OF THE TRANSIT INSTRUMENT.

Date.	Azimuth.	Star observed.
1852.	″	
Aug. 25	1·6 E.	α Ursæ Min.
26	2·1 ”	”
27	2·7 ”	”
28	2·7 ”	”
July 1 to Aug. 31	1·85 E.	
Sept. 2	2·4 E.	α Ursæ Min.
3	0·2 ”	”
8	0·8 ”	”
16	Inverted Axis and found error of Collimation about 0″·5 E.	
18	1·1 E.	α Ursæ Min.
22	0·6 ”	”
23	1·7 ”	”
24	0·6 ”	”
25	0·0 ”	”
Sept. 1 to Oct. 9.	0·93 E.	

Date.	Azimuth.	Star observed.
1852.		
Oct. 15	Inverted Axis; Collimation found correct.	
	″	
25	5·0 W.	α Ursæ Min.
26	5·6 ”	”
27	5·5 ”	”
28	4·8 ”	”
29	5·0 ”	”
10—31	5·18 W.	
Nov. 2	5·0 W.	α Ursæ Min.
8	7·6 ”	”
9	9·1 ”	”
11	7·8 ”	”
15	7·2 ”	” S.P.
	Inverted Axis and found error of Collimation 0″·5 E.	
20	7·7 W.	α Ursæ Min.
23	7·6 ”	”

Date.	Azimuth.	Star observed.
1852.	″	
Nov. 24	7·7 W.	α Ursæ Min.
25	7·5 ”	”
1—30	7·46 W.	
Dec. 8	8·1 W.	α Ursæ Min.
”	8·1 ”	” S.P.
10	7·7 ”	” ”
13	Inverted Axis and found Collimation correct.	
15	6·0 W.	α Ursæ Min. S.P.
16	8·3 ”	α Ursæ Min.
21	8·2 ”	”
22	8·5 ”	”
30	6·8 ”	”
1—31	7·71 W.	

DAILY RATE OF THE TRANSIT CLOCK.

1848.	s.
Jan. 4	+ 2·90
5	+ 2·74
6	+ 2·87
7	+ 2·85
,,	Found the clock stopt; I applied oil to the escapement.
10	+ 1·18
11	+ 0·95
12	+ 0·73
13	+ 0·55
14	+ 0·91
15	+ 0·62
16	+ 0·80
17	+ 0·83
18	+ 0·88
19	+ 0·88
20	Wound up the clock.
21	+ 1·24
22	+ 1·34
23	+ 1·58
24	+ 1·51
25	+ 1·46
26	+ 1·38
27	+ 1·27
28	+ 1·20
29	+ 1·13
30	+ 1·14
31	+ 1·15
Feb. 1	+ 1·06
2	+ 1·10
3	+ 1·09
4	+ 1·15
5	+ 0·99
6	+ 1·15
7	+ 1·21
8	+ 1·23
9	+ 1·01
10	+ 1·14
11	+ 1·24
12	+ 1·14
13	+ 1·25
14	+ 1·35
,,	Clock stopt a few seconds in winding up.
16	+ 1·06
17	+ 1·02
18	+ 1·32
19	+ 1·23
20	+ 1·32
21	+ 1·32
22	+ 1·51
23	+ 1·64
24	+ 1·44
25	+ 1·52

1848.	s.
Feb. 26	+ 1·60
27	+ 1·68
28	+ 1·68
29	+ 1·59
Mar. 1	+ 1·65
2	+ 1·58
3	+ 1·59
4	+ 1·73
5	+ 1·64
6	+ 1·64
7	+ 1·72
8	+ 1·70
9	+ 1·50
10	+ 1·70
,,	Wound up the clock and put back one minute.
12	+ 0·72
13	+ 0·72
14	+ 0·93
15	+ 0·99
16	+ 1·02
17	+ 1·01
18	+ 0·88
19	+ 0·92
20	+ 1·34
21	+ 1·02
22	+ 1·01
23	+ 1·00
24	+ 1·28
25	+ 1·18
26	+ 1·09
27	+ 1·09
28	+ 1·11
29	+ 1·03
30	+ 1·22
31	+ 1·22
April 1	+ 1·29
3	+ 1·29
4	+ 1·17
6	Wound up the clock.
,,	+ 1·21
7	+ 1·31
8	+ 1·37
9	+ 1·93
10	+ 1·96
11	+ 1·77
12	+ 1·56
13	+ 1·59
14	+ 1·26
15	+ 1·42
17	+ 1·53
18	+ 1·59
19	+ 1·58
20	+ 1·55
21, 22, 23	+ 1·56

1848.	s.
Apr. 24	+ 1·54
25	+ 1·32
28	+ 1·51
29	+ 1·60
30	+ 1·40
May 1	+ 1·25
2	+ 1·10
,,	Put back one minute.
4	+ 1·33
5	+ 1·55
6	+ 1·62
7	+ 1·48
8	+ 1·48
9	+ 1·40
10	+ 1·36
11	+ 1·38
12	+ 1·87
13	+ 1·60
14	+ 1·80
15	+ 1·80
16	+ 1·55
17	+ 1·74
18	+ 1·77
19	+ 1·44
20	+ 1·63
21	+ 1·50
22	+ 1·50
23	+ 1·64
24	+ 1·62
25	+ 1·62
26	+ 1·50
27	+ 1·59
28	Stopt 1 minute 45 seconds, in winding.
31	+ 1·60
June 1	+ 1·70
2 to 7	+ 1·40
8	+ 1·58
9	+ 1·47
10	+ 1·41
14	+ 1·61
20	+ 1·21
21	+ 1·68
22	+ 1·68
23	Wound up the clock.
,,	+ 1·11
27	+ 0·81
28	+ 0·67
30	+ 0·53
July 1	+ 0·65
2	+ 0·66
3	+ 0·66
4	+ 0·63

1848.	s.
July 5 to 7	+ 0·68
8	+ 0·73
18	Wound up the clock.
19 to 24	+ 1·50
25	+ 1·66
26	+ 1·21
27	+ 1·59
28	+ 1·52
29	+ 1·51
30	Found the clock stopt; removed a few cobwebs that were in it and set it going. Applied some oil to the escapement.
Aug. 1	— 0·03
2	— 0·15
3	— 0·53
4	— 0·22
7, 9, 10, 11	— 0·04
,,	Wound up the clock.
12, 15, 20, 22	— 0·37
23	+ 0·16
24	+ 0·16
25	+ 0·29
26	+ 0·29
27, 28, 30	+ 0·68
31	+ 0·68
Sept. 1, 4	+ 0·60
5	+ 0·62
6	+ 0·70
7	+ 0·70
8	Wound up the clock.
9	+ 0·85
10 to 13	+ 0·77
14	+ 0·39
15	+ 0·62
18	+ 0·63
19	+ 0·83
20	+ 0·88
22	+ 1·10
23	+ 1·38
25	+ 1·14
26	+ 1·17

DAILY RATE OF THE TRANSIT CLOCK, (*Continued.*)

1848.	s.
Sep. 27	+ 1·11
Sep. 28 to Oct. 2	+ 1·47
3	Wound up the clock.
4	+ 1·26
5 to 10	+ 0·92
11	+ 0·90
12	+ 0·86
13	+ 0·78
14	+ 0·82
15	+ 0·83
16	+ 0·83
17	+ 0·86
18	+ 1·03
19	+ 0·83
20	+ 0·95
21	+ 0·88
22	+ 1·04
23	+ 0·99
24	+ 1·02
27	Wound up the clock and put back 1 minute.
28	+ 0·80
30	+ 0·83
Nov. 2	+ 1·20
6	+ 1·25
7	+ 1·26
10	+ 1·42
11	+ 1·47
13	+ 1·37
17	+ 1·26
18	+ 1·26
19	Wound up the clock.
20	+ 0·88
21	+ 0·62
22	+ 0·52
23	+ 0·67
24	+ 0·45
25 to 28	+ 0·70
29	+ 0·78
30	+ 1·00
Dec. 2	+ 2·12
4	+ 2·12
5	+ 1·85
6	+ 2·08
7	+ 1·72
8	+ 1·48
9	+ 1·55
12	+ 1·55
14	Wound up the clock.
15	+ 1·63

1848.	s.
Dec. 16 & 17	+ 0·91
18	+ 0·74
19	+ 0·81
20	+ 0·59
21	+ 0 54
22	+ 0 39
23 to 27	+ 0·47
28	+ 0·55
29	+ 0·50
30	+ 0 60
1849. Jan. 2	+ 0·47
3	+ 0·30
4	+ 0·31
8	+ 0·27
,,	Wound up the clock and put back 1 minute.
10	— 0·15
11	+ 0·25
12	+ 0·34
13	+ 0·39
15	+ 0·30
16	+ 0·24
17	+ 0·28
18	+ 0·24
19	+ 0·25
20 to 22	+ 0·45
23	+ 0·45
24	+ 0·64
25	+ 0·91
26	+ 0·74
27	+ 0·74
28	+ 0·77
29	+ 0·81
30	+ 0·75
31	+ 1·00
Feb. 1	+ 0·85
2	+ 0·79
,,	Wound up the clock.
3, 4	+ 0·17
5	+ 0·17
6	+ 0·41
7	+ 1·27
8	+ 1·62
9	+ 1·33
10	+ 1·45
11	+ 1·37
12	+ 1·12
13	+ 1·13
14	+ 0·96
15	+ 1·12
16	+ 1·16
17	+ 1·24
18	+ 1·67

1849.	s.
Feb. 19	+ 2·00
20	+ 2·22
21	+ 2·06
,,	Clock oiled by Mr. Orr.
22	+ 1·64
23	+ 1·64
24	+ 1·64
25	+ 1·63
26	+ 1·68
27	+ 1·36
28	+ 1·42
,,	Wound up the clock and put back 1 minute.
Mar. 1	+ 0·87
2	+ 0·87
3	+ 0·82
4	+ 0·67
5	+ 0·63
6	+ 0·64
7	+ 0·62
8	+ 0·60
9	+ 0·96
10	+ 1·47
11	+ 1·70
12	+ 1·96
13	+ 1·64
14	+ 1·38
15	+ 1·22
16	+ 1·22
17	+ 1·47
18	+ 1·66
19	+ 1·56
20	+ 1·26
21	+ 1·32
22	+ 1·28
23	+ 1·30
24 & 25	+ 1·31
26 & 27	+ 1·29
28	+ 1·21
29	+ 1·23
30	+ 1·31
31	+ 1·25
Apr. 1	+ 1·15
2	+ 1·05
3	+ 1·18
4	+ 0·98
5	+ 1·01
6 to 8	+ 1·11
9	+ 1·12
10	+ 1·23
11	+ 1·24
12	+ 1·25
13	+ 1·22
14	+ 1·12
15	+ 1·52
16	+ 1·52
17	+ 1·32

1849.	s.
Apr. 18	+ 1·31
19	+ 1·31
20	Wound up the clock and put back 1 minute.
21 to 23	+ 0·97
24	+ 1·16
25	+ 1·32
26	+ 1·03
27	+ 0·84
28	+ 0·80
29	+ 0·73
30	+ 0·74
May 1	+ 0·77
2	+ 0·77
3	+ 0·74
4	+ 0·69
5	+ 0·73
7	+ 0·75
8	+ 0·82
9	+ 0 96
10	+ 0·90
11	+ 0·98
12	+ 0·64
13	+ 0·82
14	+ 0·84
15	+ 1·19
16	+ 1·11
,,	Clock stopt, 40 s. in winding up.
17 & 18	+ 1·09
19	+ 0·85
21	+ 0·86
22	+ 0·74
23	+ 0·80
25	+ 0·79
26	+ 0·34
27	+ 0·50
28	+ 0·52
May 29 to June 3	+ 0·67
4	+ 0·65
5	+ 0·89
6	+ 0·91
7	+ 0·97
8	+ 1·13
10	Wound up the clock.
11 & 12	+ 0·79
13 to 19	+ 1·02
20	+ 1·02
21 to 23	+ 1·03
24	+ 1·00
25	+ 0·99
26	+ 0·91
27	+ 0·92
29	+ 0·92

DAILY RATE OF THE TRANSIT CLOCK, (*Continued.*)

1849.	s.
June 30	+ 0·92
July 3, 5	+ 1·06
6	+ 0·95
„	Wound up the clock.
7	+ 1·21
July 9	+ 1·21
10	+ 1·37
11	+ 1·12
12	+ 1·20
13	+ 1·45
14	+ 1·58
15	+ 1·62
16	+ 1·69
17	+ 1·64
18	+ 1·38
19	+ 1·39
20	+ 1·40
21	+ 1·40
27 to 31	+ 1·25
Aug. 1	Wound up the clock.
4	+ 1·16
6	+ 1·25
7	+ 1·30
8	+ 1·25
9	+ 1·10
10	+ 1·14
11	+ 1·20
12	+ 1·38
13	+ 1·38
14	+ 1·34
15	+ 1·36
16	+ 1·48
17	+ 1·30
18	+ 1·29
19	+ 1·42
20	+ 1·45
21	+ 1·44
22	+ 1·73
23	+ 1·68
24	+ 1·80
25 to 27	+ 1·80
28	Wound up the clock and put back 1 minute.
29 & 30	+ 1·27
31	+ 1·31
Sept. 1 to 4	+ 1·70
5	+ 1·60
6, 8	+ 1·58
11	+ 1·53
12	+ 1·51
13	+ 1·51

1849.	s.
Sep. 14, 15, 17	+ 1·41
18	+ 1·41
19	+ 1·49
20	+ 1·38
21	Wound up the clock and put back 1 minute.
22 to 24	+ 1·25
25	+ 1·18
26	+ 1·12
27	+ 1·02
28	+ 1·03
29	+ 1·05
Oct. 1	+ 1·08
2	+ 1·24
3 to 7	+ 1·34
8	+ 1·02
10	+ 1·43
11	+ 1·56
12	+ 1·50
13	+ 1·50
14	+ 1·44
15	+ 1·51
16	+ 1·50
17	Wound up the clock.
„	+ 1·26
18	+ 1·40
19	+ 1·61
20	+ 1·61
21	+ 1·50
22	+ 1·54
23	+ 1·50
24	+ 1·58
25	+ 1·59
26	+ 1·59
27	+ 1·60
28	+ 1·60
29	+ 1·60
30	+ 1·84
31	+ 1·73
Nov. 1	+ 1·67
2	+ 1·56
3	+ 1·59
4	+ 1·56
5	+ 1·72
6	+ 1·75
8	+ 1·62
9	+ 1·65
10	+ 1·80
11	+ 1·80
„	Wound up the clock, and put back 1 minute.
12 & 13	+ 1·84
14	+ 1·97
15	+ 1·82

1849.	s.
Nov. 16	+ 1·68
17	+ 1·51
18	+ 1·70
19	+ 1·67
20	+ 1·61
21	+ 1·72
22	+ 1·92
23	+ 1·79
24	+ 1·63
25	+ 1·63
26	+ 1·80
28	+ 1·98
29	+ 1·90
30	+ 1·73
Dec. 1	+ 1·78
2	+ 1·83
3	+ 1·89
4	+ 1·91
5	+ 1·91
6	Wound up the clock and put back 1 minute.
8	+ 1·69
10	+ 1·66
11	+ 1·62
12	+ 1·64
13	+ 1·62
14	+ 1·56
15	+ 1·86
17	+ 2·04
18	+ 2·65
19	+ 2·35
20	+ 2·02
21	+ 1·97
22	+ 1·78
26	+ 2·04
27	+ 2·08
28	+ 2·07
29	+ 2·08
1850. Jan. 1	+ 2·29
„	Wound up the clock.
2	+ 2·20
3	+ 2·25
4	+ 2·22
5	+ 2·36
6	+ 2·29
7	+ 2·22
8	+ 2·27
9	+ 2·33
10	+ 2·48
11	+ 2·32
12, 13	+ 2·29
14	+ 2·60
„	Oiled the clock.

1850.	s.
Jan. 15	+ 3·12
16	+ 3·80
17	+ 4·36
18	+ 4·39
19	+ 4·77
20	+ 4·79
21	Clock removed to be cleaned by Mr. Orr.
24	Clock set up again, having been cleaned.
24 & 25	— 2·50
„	As the clock is losing about 3s. per day, altered pendulum screw one division; in doing so stopped the clock for 1·3s.— time 15h. 40m.
26	— 1·86
„	At 15h. 48m. altered pendulum screw two divisions; in doing so stopped the clock 1·0s.
27	— 0·30
28	— 0·90
29	— 0·98
30	— 0·83
31	— 0·65
Feb. 1	— 0·43
2	— 0·12
3	— 0·06
4	— 0·07
5	— 0·29
6	— 0·53
7	— 0·74
8	— 0·74
11	— 0·54
12	— 0·10
13	+ 0·13
14	— 0·08
15	— 0·39
16	— 0·56
17	— 0·30
18	— 0·29
19	— 0·22
20	— 0·48
„	Wound up the clock.
21	+ 0·09
22	+ 0·40
23	+ 0·30
24	+ 0·30

DAILY RATE OF THE TRANSIT CLOCK, (Continued.)

1851.	s.
May 25	+ 0·06
26	— 0·02
27	+ 0·21
28	+ 0·52
29	+ 0·20
30	+ 0·21
31	— 0·05
June 1	— 0·30
2	— 0·59
3	— 0·40
4	— 0·29
5	— 0·28
6	— 0·10
7 & 8	— 0·30
9	— 0·39
10 & 11	— 0·48
12	— 0·47
„	The clock weight fell from the breaking of the line.
13	A line put in by Mr. Orr who set the clock.
14 & 15	— 3·36
16	— 3·13
17	— 3·00
18	— 3·12
19	— 3·19
20	— 3·14
23	— 3·13
24	— 2·99
25	— 2·96
26	— 3·02
27	— 2·93
28	— 2·86
29	— 2·79
30	— 2·73
1	— 2·78
2	— 2·68
3	— 2·62
4 & 5	— 2·73
6	Clock losing 3 seconds, altered the nut 3 divisions, 20 to 23.
7 to 11	— 0·14
14	Clock stopped several seconds in winding up and put forward 1 minute.
19 21	+ 0·70
22	+ 0·83
23	+ 0·79
24	+ 0·91

1851.	s.
July 25	+ 0·99
26	+ 0·99
28	+ 0·75
Aug. 1 to 4	+ 0·74
5	+ 0·63
6	+ 0·61
7	+ 0·29
8	+ 0·54
9	+ 0·54
10	+ 0·42
„	Wound up the clock.
11	+ 0·54
12	+ 0·50
13	+ 0·39
14	+ 0·37
15	+ 0·37
16	+ 0·61
17	+ 0·48
18	+ 0·71
19	+ 0·86
20	+ 0·86
21	+ 0·90
22& 23	+ 0·93
25& 26	+ 0·80
27	+ 0·92
28	+ 0·90
31	+ 0·90
Sep. 1	+ 0·88
2	+ 0·84
3	+ 0·69
4	+ 0·69
5	+ 0·68
6	+ 0·68
7	+ 0·52
„	Wound up the clock.
8	+ 0·70
9	+ 0·70
10	+ 0·61
11	+ 0·58
12	+ 0·48
13	+ 0·50
14	+ 0·45
15	+ 0·49
16	+ 0·46
17	+ 0·49
18	+ 0·63
19	+ 0·62
20	+ 0·55
21	+ 0·56
22	+ 0·60
23	+ 0·65
24	+ 0·62
25	+ 0·64
27	+ 0·76
28	+ 0·79

1851.	s.
Sep. 29	+ 0·71
30	+ 0·80
Oct. 1	+ 0·89
2	+ 0·81
3	+ 0·78
4 & 5	+ 0·78
6	Wound up the clock.
6 & 7	+ 0·64
11	+ 0·64
12	+ 0·64
13	+ 0·78
14	+ 0·64
15	+ 0·76
16	+ 0·82
17	+ 0·68
18	+ 0·86
20	+ 0·77
21	+ 0·67
23	+ 0·63
24	+ 0·60
25	+ 0·74
26	+ 0·63
27	+ 0·52
28	+ 0·66
29	+ 0·81
30	+ 0·72
31	+ 0·72
Nov. 3	Wound up the clock.
7	+ 0·80
8	+ 0·80
9	+ 0·88
10	+ 0·79
11	+ 0·75
12 13	+ 0·83
17	+ 0·99
18	+ 1·02
19	+ 1·00
20	+ 1·06
21	+ 1·08
22	+ 1·16
23	+ 1·08
24	+ 1·00
25	+ 0·88
26	+ 0·91
27	+ 0·86
28	+ 0·61
29	+ 0·64
Dec. 1	Wound up the clock.
1	+ 0·64
2	+ 0·79
3	+ 0·69
4	+ 0·64
5	+ 0·59
6	+ 0·56

1851.	s.
Dec. 7	+ 0·56
8	+ 0·31
9	+ 0·45
10	+ 0·33
11	+ 0·22
12	+ 0·33
15	+ 0·45
16	+ 0·29
17	+ 0·43
18	+ 0·31
19	+ 0·26
20	+ 0·13
21	+ 0·08
22	+ 0·17
23	+ 0·18
24	+ 0·12
25	+ 0·15
26	+ 0·23
27& 28	+ 0·35
29& 30	+ 0·48
30	Wound up the clock and put back 1 minute.
31	+ 0·48
1852.	
Jan. 1	+ 0·15
2	+ 0·15
3	+ 0·42
4	+ 0·37
5	+ 0·32
6	+ 0·21
7	+ 0·13
8	+ 0·28
9	+ 0·26
10	+ 0·38
11	+ 0·48
12	+ 0·50
13	+ 0·51
14	+ 0·51
15	+ 0·52
16	+ 0·42
17	+ 0 51
18	+ 0·52
19	+ 0·43
20	+ 0·42
21	+ 0·48
22	+ 0·51
23	+ 0·63
24	+ 0·50
25	+ 0·50
26	+ 0·43
27	+ 0·51
28	+ 0·99
„	Wound up the clock.
29	+ 1·49
30	+ 1·95
31	+ 2·14
Feb. 1	+ 2·33
2	+ 2·35

DAILY RATE OF THE TRANSIT CLOCK, *(Continued.)*

1852.	s.
Feb. 3	+ 2·45
4	+ 2·76
5	+ 2·83
6	+ 2·64
7	+ 2·77
8	+ 2·76
9	+ 2·45
10	+ 2·30
11	+ 2·30
12	+ 2·50
13	+ 2·64
14	+ 2·67
15	+ 2·58
16	+ 2·23
17	+ 2·31
18	+ 2·40
19	+ 2·55
20	+ 2·44
21	+ 2·39
22	+ 2·38
23	+ 2·34
24	+ 2·35
25	+ 2·35
"	Wound up the clock and put back 1 minute.
26 & 27	+ 1·99
28	+ 2·06
29	+ 2·06
Mar. 1	+ 2·06
2	+ 2·14
3	+ 2·18
4	Let down pendulum screw 3 divisions without stopping the clock.
5	— 1·05
6	— 0·82
7	— 0·82
8	Turned up pendulum screw 1 division without stopping the clock.
8 & 9	+ 0·57
10	+ 0·80
11	+ 0·68
12	+ 0·78
13	+ 0·85
15	+ 0·86
16	+ 0·86
17	+ 0·94
18	+ 0·94
19	+ 1·02
20	+ 1·13
21	+ 1·13
22	+ 0·96
23	+ 0·77
24	+ 0·77

1852.	s.
Mar. 25	Wound up the clock.
25 & 26	+ 0·78
27	+ 0·66
28	+ 0·76
29	+ 0·78
30	+ 0·67
31	+ 0·65
Apr. 1	+ 0·63
2	+ 0·66
3	+ 0·62
4	+ 0·62
5	+ 0·63
6	+ 0·54
7	+ 0·56
8	+ 0·62
9	+ 0·56
10 & 11	+ 0·43
12	+ 0·50
13	+ 0·50
14	+ 0·50
15	+ 0·45
16	+ 0·47
17	+ 0·51
18	+ 0·51
19	+ 0·52
20	+ 0·55
21	+ 0·55
"	Wound up the clock.
22	+ 0·55
23	+ 0·55
24	+ 0·59
26	+ 0·61
27	+ 0·57
28	+ 0·66
29	+ 0·82
30	+ 0·76
May 1	+ 0·76
3	+ 0·76
4 to 6	+ 0·77
7	+ 0·76
8	+ 0·70
9	+ 0·69
10	+ 0·62
11 & 12	+ 0·59
13	+ 0·55
14	+ 0·44
15	+ 0·48
16	+ 0·50
17	+ 0·51
18	+ 0·60
19	+ 0·66
20	+ 0·60
"	Wound up the clock.

1852.	s.
May 21 22	+ 1·35
23	+ 1·35
"	Let the pendulum screw down 1 division without stopping the clock.
24 & 25	— 0·16
26	— 0·12
27	— 0·18
28	— 0·21
29	— 0·28
30	— 0·28
31	— 0·28
June 1	— 0·34
2	— 0·34
3	— 0·45
4	— 0·48
5	— 0·54
6	— 0·65
7	— 0·53
8	— 0·50
9	— 0·64
10	— 0·62
11	— 0·48
12	— 0·68
13	— 0·66
14 & 15	— 0·66
16	Wound up the clock.
18	— 1·07
19	— 1·16
20	— 1·14
21	— 1·15
25	— 1·20
28	— 1·20
29	— 1·21
July 1	— 1·21
2	— 1·21
3	— 1·32
4	— 1·18
5	— 1·12
6	— 1·00
7	— 1·09
8	— 0·98
9	— 0·97
10	— 1·02
11	— 1·05
12	— 1·06
13	— 1·16
14	— 1·33
15	— 1·33
"	Wound up the clock. Turned the pendulum screw up 1 division without stopping the clock.

1852.	s.
July 16	— 1·38
17	Turned up pendulum screw 2 divisions without stopping the clock.
18	+ 0·24
19	+ 0·29
20	+ 0·38
23	+ 0·92
24	+ 0·99
25	+ 0·99
26	+ 1·07
27	+ 0·95
28	+ 1·04
29	+ 1·14
Aug. 2	+ 1·24
4	+ 1·21
5	+ 1·19
6	+ 1·24
9	+ 1·20
10	+ 1·03
11	+ 0·97
12	+ 1·19
13 & 14	+ 1·35
15	Wound up the clock. Let down pendulum screw 1·5 division.
16 & 17	— 3·29
17	Turned up pendulum screw 2 divisions.
18 to 22	+ 2·35
23	+ 1·18
"	Turned pendulum screw down 1 division.
24	— 0·98
25	Turned up pendulum screw 0·5 division.
26	— 1·94
27	— 1·88
28	— 1·77
29	— 1·80
Sep. 1	— 1·88
"	Pendulum going unsteady with a twist; removed the case and found a number of cobwebs attached to the upper part; removed them.

DAILY RATE OF THE TRANSIT CLOCK, *(Continued.)*

1852. Sep.	s.
2 & 3	+ 0·17
4	+ 0·13
6	+ 0·17
7	+ 0·19
8	+ 0·19
9	+ 0·38
10 & 11	+ 0·57
13	Clock stopt a few seconds in winding.
14 & 15	+ 0·78
"	Examined the clock but could find no defect.
16 & 17	+ 0·56
18	+ 0·13
19	+ 0·13
20	— 0·03
21	+ 0·18
22	+ 0·35
23	+ 0·43
24	+ 0·40
25	+ 0·35
26	+ 0·39
27	+ 0·37
28	+ 0·49
29	+ 0·50
30	+ 0·62

1852.	s.
Oct. 1	+ 0·62
2	+ 0·74
3	+ 0·53
4	+ 0·42
5	+ 0·56
6	+ 0·56
10 & 11	+ 1·12
12	+ 1·12
13	+ 1·12
"	Wound up the clock.
14 & 15	+ 0·55
16	+ 0·72
17	+ 0·72
18	+ 0·72
19 to 22	+ 1·62
23	+ 2·01
25	+ 2·01
26	+ 2·47
27	+ 2·48
28 & 29	+ 2·35
29	Clock gaining 2 seconds per day; turned screw down 2 divisions.
30 & 31	— 0·90
Nov. 1	— 0·90

1852.	s.
Nov. 2	— 1·08
3	— 0·57
6	+ 0·15
7	+ 0·31
8	+ 0·14
9 to 11	+ 0·18
11	Wound up the clock.
12	— 1·34
15	1·20
16	1·07
19	1·07
20	1·01
21 & 22	0·88
23	Clock had stopt at 9h 2m, a cobweb was found attached to the extremity of the pendulum; removed it and set the clock by Chronometer No. 1344 at 9h 15m.
23 to 26	— 1·51
Dec. 1 to 4	— 0·80
5	— 0·80

1852.	s.
Dec. 6	— 0·69
7	— 0·78
8	— 1·01
9	— 1·09
10	— 1·09
"	Wound up the clock: it stopt in the winding. The clock has therefore lost 1m 54s; put it on 2m.
11 & 12	— 1·59
13	— 1·59
15	— 1·51
16	— 1·44
17	— 1·40
20	— 1·45
21	— 1·45
"	Screwed up pendulum 1·2 division.
22 to 25	— 0·22
26	— 0·20
27	— 0·18
28	— 0·18
30	— 0·18

INDEX ERROR OF THE MURAL CIRCLE.

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1848.					
Jan. 2	I took out the circle and cleaned the Axis; also cleaned and adjusted the Micrometers. T. G. T.				
		′ ″		′ ″	″
3	13	+ 1 38·58	3	+ 1 37·18	+ 1·40
4	11	37·41	4	36·54	+ 0·87
5	13	36·90	3	37·10	— 0·20
6	9	36·16	5	36·04	+ 0·12
7	13	35·55	5	36·23	— 0·68
8	12	35·03	4	35·64	— 0·61
10	9	34·56	5	35·42	— 0·86
11 & 12	10	32·78	9	33·32	— 0·54
13	10	25·75	3	25·61	+ 0·14
14	6	26·17	4	24·90	+ 1·27
15 & 16	11	24·69	5	24·73	— 0·04
17 & 18	16	23·57	5	22·90	+ 0·67
	I reduced the reading of Microscope D, 20″, which altered suddenly to about this amount on the 13th. T. G. T.				
18	13	+ 1 29·79	4	+ 1 28·44	+ 1·35
19	16	28·36	5	27·45	+ 0·91
20	15	28·27	5	27·61	+ 0·66
21	16	28·19	5	28·07	+ 0·12
22 to 24	19	26·49	7	26·90	— 0·41
	This sudden alteration of the Microscope D arises from the shoulder of the screw having worn so as to allow of the rim of the Micrometer head to rub against the zero lozenge, on the body of the Micrometer—the observations are suspended in consequence. I rectified this by filing away the edge of the Micrometer head. T. G. T.				
25	12	+ 1 27·06	5	+ 1 27·93	— 0·87
26	10	26·87	3	27·11	— 0·24
27	13	25·58	5	25·74	— 0·16
28	15	25·30	5	25·75	— 0·45
29 & 30	16	24·56	5	23·97	+ 0·59
31	14	24·25	3	23·19	+ 1·06
Feb. 1	13	23·59	5	23·58	+ 0·01
2	14	23·55	4	23·16	+ 0·39
3	12	23·02	5	22·84	+ 0·18
4	16	22·26	5	23·51	— 1·25
5	12	22·33	4	21·65	+ 0·68
6 & 7	17	20·47	5	21·33	— 0·86
8	9	20·65	4	20·39	+ 0·26
9	12	20·45	5	20·94	— 0·49
10	9	20·23	5	19·85	+ 0·38
11	11	19·59	4	19·74	— 0·15
12	11	19·12	3	19·71	— 0·59
14	7	19·56	3	19·80	— 0·24
15	9	19·15	4	19·35	— 0·20
16	7	19·18	4	18·47	+ 0·71
17	5	19·19	3	19·29	— 0·10
18	8	19·40	5	19·45	— 0·05
19	10	18·99	4	19·26	— 0·27

Date.	No of Obs.	Index Error by Stars.	No. of Obs	Index Error by Reflecting Collimator.	Differer
1848.					
Feb.		′ ″		′ ″	″
20 & 21	14	+ 1 18·44	5	+ 1 18·48	— 0
22	10	18·32	4	19·32	— 1
23	10	18·75	4	18 92	— 0
24	9	17·94	4	17·69	+ 0
25	8	17·77	4	17·17	+ 0
26 & 27	13	17·70	4	16·80	+ 0
28	14	17·94	4	16·85	+ 1
29	13	16·07	5	16·07	0
Mar. 1	17	15·89	5	14·41	+ 1
2	16	15·69	5	15·28	+ 0
3	5	15·51	4	15·35	+ 0
4	16	15·86	4	15·13	+ 0
6	14	14·82	5	14·59	+ 0
7	15	12·24	5	13·02	— 0
8	14	12·26	4	11·98	+ 0
9	13	12·03	4	11·76	+ 0
10	11	11·83	5	11·53	+ 0
11	14	11·38	4	11·36	+ 0
13	13	11·83	5	11·84	— 0
14	12	11·70	5	11·90	— 0
15	12	11·37	5	10·55	+ 0
16	11	11·38	5	10·40	+ C
17	5	10·93	5	11·22	— C
18	9	10·35	4	10·09	+ C
19	2	9·33	—	—	—
20	13	11·02	4	11·50	— (
21	11	10·82	5	9·82	+ 1
22	12	10·43	5	10·26	+ (
23	12	10·00	5	10·17	— (
24	10	10·30	5	9·89	+ (
25	10	10·51	4	10·29	+ (
27	10	10·15	5	11·39	—
	The wires were frayed and covered with dus trying to shake it off and blowing gently, I o' ed a separation of the vertical wire; it was br Put in a new set. The dust appears to b black of the tube of the Telescope, and also it and the oil of the Micrometer screw, as the ticles about the wire plate left a greasy black The wires are rather thick, similar to the Tran W. K.				
28	8	+ 1 46·69	2	+ 1 44·75	+
	On examining the wires found them clear firmly set, but the adjusting screw of the hori wire was *not* home, moving whilst I shade hand from the light, my hand resting on the —set it firm and re-adjusted the vertical and zontal *wires*. The following are the readings for Error: W. K.				
29	9	+ 0 54·95	3	+ 0 55·25	—

INDEX ERROR OF THE MURAL CIRCLE, *(Continued.)*

Date.	No of Obs	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1848.					
Mar. 29	The south friction roller Axle has worn its bearing very much away. W. K. W.				
		′ ″		′ ″	″
30	8	+ 0 54·81	5	+ 0 54·88	— 0·07
31	11	54·72	5	54·95	— 0·23
	The clamp screws below A and B reported to require repair. On examining them I found the upper clamp plate had been worn away, the circle consequently was scarcely held; the plate would not "bite." Carefully filed away the other part to lower it, to touch the limb of the circle. They now act perfectly. The screws are good enough. W. K. W.				
April 1	9	+ 0 54·45	4	+ 0 55·33	— 0·88
2	Vide remark 29th March. The bearing continues to enlarge. Lest the axis of the circle should be subjected to unequal wear, discontinued the observations, Captain Smith having kindly promised to repair the injury, after examining it and agreeing with me that it would be advisable to do so. The hole is worn ·85* larger than the Axle. Sent for repair. W. K. W.				
10	Captain Smith returned the Friction Wheels having bouched the damaged bearing with steel. Mr. R. Allan and C. Veerasawmy Pillay remarked that previous to the discovery of the damage, subsequent in fact to the last oiling in January, the divisions of the circle "were on one side" of the cross wire, and suggested that the Friction Wheels had been sustaining more than their due weight. On examining this, I found that the Circle was *not* pushed home. I put the Circle gently in and Mr. R. Allan tightened the back screws with his fingers fully "four turns." Whilst the wheels were under repair, I sent the Collimator to be adjusted and fitted. N. B.—Mr. Vincent failed to make a proper screw adjustment to the speculum until the 13th. W. K. W.				
11	4	+ 0 54·73	—	——	——
12	7	54·68	—	——	——
13	6	54·38	2	+ 0 55·20	— 0·82
14	8	54·28	4	55·50	— 1·22
15	8	53·92	4	54·24	— 0·32
17	6	51·44	4	52·22	— 0·78
18	7	51·60	5	51·18	+ 0·42
19	8	51·14	5	51·14	0·00
20	9	51·34	4	51·59	— 0·25
22 to 24	11	52·24	5	51·61	+ 0·63
25	11	52·21	5	51·58	+ 0·63
28	9	53·89	4	51·90	+ 1·99
29	8	53·00	3	52·33	+ 0·67
May 1 & 2	11	53·35	9	52·77	+ 0·58
3	9	53·31	5	52·51	+ 0·80
4	3	53·89	5	52·99	+ 0·90

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1848.		′ ″		′ ″	″
May 5	10	+ 0 53·08	5	+ 0 52·49	+ 0·59
6	10	53·41	4	52·77	+ 0·64
8	9	53·19	5	52·66	+ 0·53
9	10	52·81	5	52·88	— 0·07
10	10	53·59	5	53·48	+ 0·11
11	9	52·07	5	52·84	— 0·77
12	10	52·49	5	52·74	— 0·25
13	10	52·53	4	52·70	— 0·17
15	7	53·44	5	52·62	+ 0·82
16	8	60·57	2	58·99	+ 1·58
17	6	54·45	5	53·18	+ 1·27
18	8	54·83	4	54·35	+ 0·48
19	6	53·94	4	53·77	+ 0·17
20	6	52·88	4	52·46	+ 0·42
22 & 23	5	51·37	5	53·06	— 1·69
25	4	50·16	3	51·90	— 1·74
26	9	51·49	3	51·36	+ 0·13
27	9	51·88	4	51·31	+ 0·57
May 29 to June 1	8	50·83	13	50·54	+ 0·29
6 & 7	7	51·02	7	51·60	— 0·58
8	5	50·92	3	50·09	+ 0·83
9 & 10	6	51·64	6	50·72	+ 0·92
19	7	52·14	3	49·99	+ 2·15
20	6	51·39	3	50·18	+ 1·21
21 & 22	4	51·87	6	50·34	+ 1·53
23	5	50·95	3	50·01	+ 0·94
26	5	50·86	3	51·02	— 0·16
27	5	50·94	4	50·59	+ 0·35
28	3	49·98	4	50·88	— 0·90
30	4	51·40	3	50·00	+ 1·40
July 1	6	51·24	3	49·51	+ 1·73
3	5	50·22	4	49·43	+ 0·79
6 to 11	6	50·13	11	49·40	+ 0·73
22 to 24	6	49·52	5	49·90	— 0·38
25	16	50·38	4	48·80	+ 1·58
26 & 27	10	50·62	6	49·73	+ 0·89
29	11	50·49	3	49·23	+ 1·26
31	9	50·39	3	49·11	+ 1·28
Aug. 1 to 3	7	50·01	7	48·70	+ 1·31
4 & 5	6	48·88	4	48·43	+ 0·45
9 & 10	6	49·84	6	48·45	+ 1·39
15	6	50·31	3	48·18	+ 2·13
23	10	50·00	3	48·18	+ 1·82
24	11	49·50	4	48·89	+ 0·61
25	14	49·53	4	48·37	+ 1·16
26	8	49·34	2	49·01	+ 0·33
Aug. 31 to Sep. 1	5	49·49	5	48·08	+ 1·41
4 & 5	6	48·40	5	47·96	+ 0·44
6 to 8	8	48·95	10	48·32	+ 0·63
9 & 10	12	48·65	3	48·06	+ 0·59
13	11	48·92	4	47·76	+ 1·16

* Sic. The scale intended is not known.

INDEX ERROR OF THE MURAL CIRCLE, *(Continued.)*

Date	No. of Obs.	Index Error by Stars.	No of Obs.	Index Error by Reflecting Collimator.	Difference.
		′ ″		′ ″	″
1848.					
Sept. 14	12	+ 0 48·40	4	+ 0 48·18	+ 0·22
15	11	48·33	4	47·58	+ 0·75
18	8	48·76	3	47·20	+ 1·56
19	4	48·71	3	47·50	+ 1·21
20	7	47·96	3	47·59	+ 0·37
22	8	48·42	3	47·20	+ 1·22
25	Found the wires of D Microscope broken—put in a new set. W. K. W.				
25	4	+ 0 47·50	2	+ 0 47·64	— 0·14
26	12	48·34	3	46·69	+ 1·65
27	4	48·05	3	47·50	+ 0·55
Oct 2 & 3	6	49·33	6	47·23	+ 2·10
7	4	48·57	2	46·96	+ 1·61
11 to 13	7	50·41	8	48·64	+ 1·77
14	5	50·61	2	49·09	+ 1·52
16	7	50·40	3	49·42	+ 0·98
17	8	51·45	3	49·22	+ 2·23
18	6	51·18	3	49·49	+ 1·69
19	8	50·92	3	49·09	+ 1·83
20	9	50·72	3	48·31	+ 2·41
21 & 22	12	50·06	2	49·70	+ 0·36
23	9	50·23	3	48·30	+ 1·93
24	7	49·12	3	48·77	+ 0·35
27 to 30	4	51·96	7	50·31	+ 1·65
Nov. 2 to 6	8	53·46	8	52·91	+ 0·55
10 & 11	4	57·21	4	56 57	+ 0·64
18	9	56·52	2	55·96	+ 0·56
20 & 21	7	55·96	7	55·76	+ 0·20
22	8	54·92	4	54·30	+ 0·62
23 & 24	6	55·69	5	55·59	+ 0·10
30	4	55·99	3	57·64	— 1·65
Dec. 2 to 4	8	62·92	6	61·83	+ 1·09
5 & 6	7	63·56	6	62·44	+ 1·12
8 & 9	7	62·88	4	62·52	+ 0·36
15 & 16	9	62·42	6	62 58	— 0·16
18	6	62·38	3	62·61	— 0·23
19	7	61·15	4	62·10	— 0·95
20	9	61·15	4	61·40	— 0·25
21	10	60·70	4	61·87	— 1·17
22 & 23	14	59·64	5	61·82	— 2·18
1849.					
Jan. 2	8	55·80	3	55·98	— 0·18
3 & 4	8	54·70	8	54·87	— 0·17
8	9	56·02	4	55·90	+ 0·12
10	6	55·55	3	56·56	— 1·01
11 to 15	10	55·91	9	55·67	+ 0·24
16	8	55·61	5	55·02	+ 0·59
17	6	54·85	4	55·73	— 0·88
18	6	54·85	3	55·24	— 0·39
19	9	53·95	5	53·56	+ 0·39
20	6	54·31	2	54·06	+ 0·25

Date.	No of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
		′ ″		′ ″	″
1849.					
Jan. 22	7	+ 0 52·57	4	+ 0 53·71	— 1·14
23	12	52·38	5	52·95	— 0·57
24	10	51·79	5	52·98	— 1·19
25	14	52·19	5	52·40	— 0·21
26	9	51·43	5	53·22	— 1·79
27 & 28	10	51·50	4	52·24	— 0·74
29	12	51·48	4	51·04	+ 0·44
30	4	51·27	3	51·53	— 0·26
31	10	51·47	4	50·86	+ 0·61
Feb. 1	13	50·88	5	50·65	+ 0·23
2	15	50·77	4	50·41	+ 0·36
3	11	50·47	3	50·23	+ 0·24
5	9	50·03	5	50·25	— 0·22
6	10	49·68	4	48·39	+ 1·29
7	8	49·23	3	49·05	+ 0·18
8	5	49·99	3	49·70	+ 0·29
9	11	48·77	4	49·31	— 0·54
10 & 11	8	48·55	5	47·66	+ 0·89
12	7	48·39	3	49·21	— 0·82
13	4	48·84	3	48·71	+ 0·13
14	12	48·75	4	47·77	+ 0·98
15	11	48·07	4	48·67	— 0·60
16	11	48·23	4	48·62	— 0·39
17 & 18	12	48·02	4	48·16	— 0·14
19	13	48·08	4	47·24	+ 0·84
20	11	48·14	4	47·25	+ 0·89
21	9	48·28	4	46·97	+ 1·31
22	10	48·07	5	47·00	+ 1·07
23	6	47·77	3	47·72	+ 0·05
24	9	47·33	3	47·45	— 0·12
26	5	48·11	3	47·17	+ 0·94
27	4	48·18	3	46·51	+ 1·67
28	6	47·42	4	47·48	— 0·06
Mar. 1	10	47·13	5	47·04	+ 0·09
2	9	46·79	5	48·81	— 2·02
3	9	46·67	3	47·48	— 0·81
5	9	46·93	4	46·00	+ 0·93
6	11	47·15	4	46·64	+ 0·51
7	10	46·97	4	47·70	— 0·73
8	11	46·89	4	47·61	— 0·72
9	9	47·38	4	47·09	+ 0·29
10	4	46·99	2	48·35	— 1·36
12	9	47·33	4	47·17	+ 0·16
13	10	46·83	4	47·22	— 0·39
14	9	46·39	5	47·17	— 0·78
15	13	46·22	4	47·35	— 1·13
16	8	46·54	4	47·65	— 1·11
17	12	45·96	3	46·45	— 0·49
19	9	46·31	4	46·07	+ 0·24
20	9	46·19	5	45·90	+ 0·29
21	7	46·16	4	46·41	— 0·25
22	9	46·55	4	46·44	+ 0·11
23	7	46·46	3	45·96	+ 0·50
24	6	46·43	3	46·31	+ 0·12
26 & 27	7	47·02	6	46·20	+ 0·82
28	5	46·95	3	46·98	— 0·03

INDEX ERROR OF THE MURAL CIRCLE, (Continued.)

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1849.		′ ″		′ ″	″
Mar. 29	6	+ 0 47·34	3	+ 0 46·48	+ 0·86
30	6	47·11	3	46·26	+ 0·85
31	6	48·16	2	46·49	+ 1·67
April 2	7	48·33	3	46·00	+ 2·33
3	7	48·40	2	46·58	+ 1·82
4	8	48·24	2	46·18	+ 2·06
5	7	47·89	3	47·16	+ 0·73
9	7	48·83	3	47·86	+ 0·97
10	7	48·29	3	48·08	+ 0·21
11	6	47·88	4	47·45	+ 0·43
12	10	51·03	5	48·89	+ 2·14
13	7	51·29	4	50·66	+ 0·63
14	4	50·72	3	50·44	+ 0·28
16	8	53·22	4	52·26	+ 0·96
17	8	55·73	3	54·45	+ 1·28
18	9	56·10	4	55·66	+ 0·44
21	4	55·07	2	56·61	— 1·54
23	3	56·92	3	55·35	+ 1·57
24 & 25	12	56·67	7	55·90	+ 0·77
26	7	55·24	4	55·94	— 0·70
27	11	55·55	4	55·17	+ 0·38
28	7	55·58	3	55·89	— 0·31
30	9	55·71	4	56·89	— 1·18
May 1	10	55·42	5	55·93	— 0·51
2	11	55·18	4	56·40	— 1·22
3	11	55·39	5	55·51	— 0·12
4	8	52·77	4	53·66	— 0·89
5	8	53·11	4	54·77	— 1·66
7	11	53·11	4	52·80	+ 0·31
8	8	53·22	5	53·83	— 0·61
9	10	53·57	5	53·97	— 0·40
10 & 11	5	52·87	8	53·74	— 0·87
12	3	53·52	1	52·80	+ 0·72
14	8	53·42	4	54·21	— 0·79
15	8	52·99	5	52·83	+ 0·16
16	7	52·92	4	52·00	+ 0·92
17	8	53·02	5	52·64	+ 0·38
18 & 19	5	52·93	7	53·15	— 0·22
21	9	53·44	5	52·39	+ 1·05
22 & 23	6	53·26	6	52·76	+ 0·50
25	9	53·14	5	52·90	+ 0·24
26	8	53·11	3	52·81	+ 0·30
28	7	53·21	4	53·51	— 0·30
June 4	6	54·02	3	53·76	+ 0·26
5	9	53·38	4	53·95	— 0·57
6 to 8	11	53·56	10	52·85	+ 0·71
11 & 12	4	53·65	5	52·95	+ 0·70
20 & 21	4	53·06	5	53·31	— 0·25
23	7	52·57	2	54·35	— 1·78
24 & 25	9	53·03	4	51·72	+ 1·31
26 & 27	6	52·65	5	52·43	+ 0·22
29 & 30	3	51·51	4	53·02	— 1·51
uly 3 to 5	5	52·52	8	51·89	+ 0·63

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1849.		′ ″		′ ″	″
July 6	4	+ 0 51·99	4	+ 0 51·70	+ 0·29
7 & 8	6	51·25	4	51·42	— 0·17
9	12	52·84	5	52·18	+ 0·66
10	9	52·46	5	52·21	+ 0·25
11	6	51·44	4	51·26	+ 0·18
12	14	52·34	5	51·96	+ 0·38
13	10	52·73	5	51·63	+ 1·10
14 & 15	12	52·62	5	51·62	+ 1·00
16	13	52·36	5	52·08	+ 0·28
17	7	51·97	4	52·41	— 0·44
18	4	51·73	4	51·52	+ 0·21
19	6	52·18	4	51·70	+ 0·48
20	8	52·27	5	52·15	+ 0·12
21	4	51·35	3	51·59	— 0·24
Aug. 6	3	51·34	3	49·91	+ 1·43
8	16	51·30	4	49·96	+ 1·34
9	6	51·17	4	50·58	+ 0·59
10	5	51·23	5	50·44	+ 0·79
11	5	51·45	3	50·57	+ 0·88
12	3	52·45	1	48·50	+ 3·95
13 & 14	7	51·89	7	49·57	+ 2·32
15	3	51·64	3	49·94	+ 1·70
16	6	51·90	5	50·28	+ 1·62
17	4	51·61	5	50·53	+ 1·08
18	3	53·25	4	49·82	+ 3·43
19	4	50·62	1	49·75	+ 0·87
20	7	51·25	4	49·80	+ 1·45
21	5	51·75	4	49·93	+ 1·82

Altered the fixed wire so as to bring it into adjustment with the Micrometer wire at Zero. The Index Error is therefore changed. W. S. J.

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
22	5	+ 2 14·78	4	+ 2 13·68	+ 1·10
23	4	14·31	4	13·91	+ 0·40
24	3	14·25	4	13·82	+ 0·43
25 & 26	5	14·42	4	13·72	+ 0·70
Aug. 30 to Sep. 1	4	15·04	8	14·19	+ 0·85
4 to 6	4	14·05	10	15·01	— 0·96
8 to 10	5	14·40	7	16·58	— 2·18
11	4	14·52	3	16·02	— 1·50
12	5	14·22	3	16·11	— 1·89
13	4	13·55	4	15·81	— 2·26
18	7	14·21	4	15·68	— 1·47
19	5	13·85	4	14·47	— 0·62
20 to 22	4	13·72	9	15·08	— 1·36
24 & 25	4	13·24	4	13·42	— 0·18
26 & 27	8	14·63	7	14·66	— 0·03

29 The Object Glass being dirty took it out and wiped it—something was heard to rattle in the tube probably a small screw, but nothing could be discovered on examination. W. S. J.

INDEX ERROR OF THE MURAL CIRCLE, *(Continued.)*

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1849.		′ ″		′ ″	″
Sep. 29 to Oct. 1	5	+ 2 13·29	6	+ 2 15·03	— 1·74
2	5	11·91	4	12·06	— 0·15
6 to 8	6	13·68	4	13·31	+ 0·37
10	5	15·49	3	14·51	+ 0·98
12	5	15·54	4	14·10	+ 1·44
13	5	15·60	1	13·70	+ 1·90
15 & 16	6	15·11	6	14·03	+ 1·08
17 & 18	5	15·31	6	14·56	+ 0·75
19	4	15·75	4	14·89	+ 0·86
20 & 21	4	15·12	4	16·12	— 1·00
22	7	15·37	4	16·71	— 1·34
23	8	14·56	4	16·83	— 2·27
24 & 25	8	14·64	8	16·53	— 1·89
26	6	14·46	4	15·88	— 1·42
28 to 30	8	13·36	7	14·84	— 1·48
31	4	13·91	4	15·78	— 1·87
Nov. 1	9	13·14	4	16·00	— 2·86
2	9	13·01	5	14·94	— 1·93
3	5	13·56	2	15·72	— 2·16
4 & 5	7	12·84	6	15·91	— 3·07
6 to 8	6	12·78	9	15·18	— 2·40
9	5	13·03	3	14·08	— 1·05
10	5	13·79	4	14·13	— 0·34
11 & 12	9	12·75	6	14·29	— 1·54
13	8	12·82	5	13·29	— 0·47
14	7	14·44	5	13·67	+ 0·77
15 & 16	5	14·89	8	14·48	+ 0·41
17 & 18	3	14·47	3	14·20	+ 0·27
19	9	14·24	4	14·10	+ 0·14
20	11	13·80	5	13·37	+ 0·43
21	12	13 51	4	14·73	— 1·22
22	7	13·43	5	13·87	— 0·44
23 & 24	7	14·07	8	14·18	— 0·11
25 & 26	5	13·23	5	13·59	— 0·36
28	9	14·52	4	13·68	+ 0·84
29 & 30	8	14·52	8	14·73	— 0·21
Dec. 1 & 2	8	13·65	4	14·45	— 0·80
3 to 5	8	14·50	9	14·55	— 0·05
8	8	14·40	3	14·58	— 0·18
10	13	12·47	4	13·99	— 1·52
11	8	12·95	5	13·94	— 0·99
12	12	12·89	5	12·86	+ 0·03
13	13	12·52	4	12·83	— 0·31
14 & 15	5	13·01	5	13·56	— 0·55
17	6	12·71	5	13·06	— 0·35
18	6	12·33	5	13·28	— 0·95
19	8	11·43	5	13·18	— 1·75
20	9	11·71	4	13·13	— 1·42
21	13	12·16	4	13·43	— 1·27
22	4	11·59	2	12·41	— 0·82
1850.					
Jan. 2	4	14·09	5	13·84	+ 0·25
3	5	13·77	3	13·95	— 0·18

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1850.		′ ″		′ ″	″
Jan. 4	5	+ 2 14·13	4	+ 2 14·30	— 0·17
5	7	13·12	4	14·04	— 0·92
7	4	12·62	3	14·66	— 2·04
8 & 9	4	13·58	7	13·79	— 0·21
10	4	12·90	4	13·59	— 0·69
11	3	11·82	4	12·88	— 1·06
13 & 14	8	11·71	6	12·60	— 0·89
15	4	11·11	4	12·41	— 1·30
16	8	11·81	5	11·78	+ 0·03
17	10	11·73	5	13·23	— 1·50
18	8	11·79	5	13·27	— 1·48
19 & 20	8	12·44	5	14·16	— 1·72
21	7	11·76	5	13·70	— 1·94
22	9	11·58	4	13·51	— 1·93
23	7	12·10	4	12·13	— 0·03
	Lifted the circle off its bearings and oiled the Axis.				
24	12	+ 2 12·54	5	+ 2 13·35	— 0·81
	Adjusted readings of Microscopes.				W. S. J.
25	14	+ 2 11·09	5	+ 2 10·92	+ 0·17
26	6	10·54	4	11·03	— 0·49
27	9	9·44	1	10·77	— 1·33
28	10	8·75	5	9·94	— 1·19
29	14	9·25	5	9·28	— 0·03
30	7	9·81	5	9·98	— 0·17
31	9	10·02	5	9·54	+ 0·48
Feb. 1	8	10·37	5	9·97	+ 0·40
2 & 3	9	10·22	4	10·07	+ 0·15
4	9	10·27	4	10·30	— 0·03
5	10	10·24	3	10·24	0·00
6	9	10·01	4	9·81	+ 0·20
7	7	9·34	3	9·20	+ 0·14
8	8	8·95	3	9·05	— 0·10
11	6	10·24	3	8·79	+ 1·45
12	6	10·74	3	8·46	+ 2·28
13	10	10·74	5	10·22	+ 0·52
14	11	11·06	4	11·05	+ 0·01
15	8	10·61	5	11·62	— 1·01
16 & 17	10	11·36	4	11·78	— 0·42
18	10	11·01	5	10·90	+ 0·11
19	12	10·97	4	10·42	+ 0·55
20	4	11·34	5	10·86	+ 0·48
21	10	11·10	4	11·09	+ 0·01
22	11	10·69	5	10·97	— 0·28
23 & 24	11	9·43	5	10·87	— 1·44
25	11	9·49	3	10·26	— 0·77
26	12	10·05	4	10·60	— 0·55
27	14	9·72	5	10·36	— 0·64
28	13	9·51	4	9·90	— 0·39
Mar. 1	12	9·44	5	10·76	— 1·32
2	12	9·41	4	10·28	— 0·87
3	5	8·67	1	9·00	— 0·33

INDEX ERROR OF THE MURAL CIRCLE, (*Continued.*)

Date.	No. of Obs.	Index Error by Stars.	No of Obs.	Index Error by Reflecting Collimator.	Difference.
1850.		′ ″		′ ″	″
Mar. 4	14	+ 2 8·94	4	+ 2 9·17	— 0·23
5	15	8·54	5	8·63	— 0·09
6	13	8·24	4	8·54	— 0·30
7	17	7·78	3	8·55	— 0·77
8	12	7·82	4	8·33	— 0·51
9	9	8·46	3	8·30	+ 0·16
10	3	7·66	1	8·40	— 0·74
11	12	8·66	4	8·92	— 0·26
12	10	8·77	4	9·94	— 1·17
13	10	9·33	4	9·44	— 0·11
14	12	9·14	3	10·21	— 1·07
15 to 17	12	9·11	7	10·12	— 1·01
18	10	6·46	4	5·58	+ 0·88
19	9	6·36	5	6·40	— 0·04
20	3	6·97	3	6·11	+ 0·86
21	8	7·18	4	6·64	+ 0·54
22	7	6·92	5	8·42	— 1·50
23	6	7·03	3	6·91	— 0·12
25	8	6·67	4	6·44	+ 0·23
26	7	6·94	4	6·20	+ 0·74
27	7	6·90	3	6·56	+ 0·34
28	4	7·63	3	6·30	+ 1·33
Apr. 3	5	7·45	4	7·69	— 0·24
4	7	6·80	4	7·01	— 0·21
5 & 6	9	6·19	6	7·04	— 0·85
8	6	5·94	4	5·85	+ 0·09
9	4	6·32	4	5·86	+ 0·46
10	6	6·35	4	6·04	+ 0·31
11	5	6·39	4	5·85	+ 0·54
13	4	6·43	4	6·06	+ 0·37
15	4	6·89	4	7·31	— 0·42
16	4	7·01	2	6·98	+ 0·03
17 & 18	5	5·89	9	6 95	— 1·06
19	4	6 88	4	6·39	+ 0·49
20	5	6·91	4	7·20	— 0·29
22 & 23	5	6·59	9	7·23	— 0·64
24	5	7·77	3	6·96	+ 0·81
25	5	7·23	3	7·62	— 0·39
26	5	7 81	3	7·95	— 0·14
27 & 28	4	7·34	3	7·24	+ 0·10
29 & 30	7	7·31	5	6·82	+ 0·49
May 1	7	6·86	4	6·41	+ 0·45
2	7	6·65	4	6·96	— 0·31
3	6	6·71	4	7·74	— 1·03
4	6	6·75	3	7·86	— 1·11
6	8	7·11	4	6·47	+ 0·64
7 & 8	9	7·32	7	6·70	+ 0·62
9	7	7·50	3	7·11	+ 0·39
10	6	7·42	3	6·59	+ 0·83
11	7	7·46	3	6·75	+ 0·71
13	7	7·69	4	7·35	+ 0·34
14	6	7·95	4	6·21	+ 1·74
15	7	8·31	4	7·76	+ 0·55
17	6	7·96	4	7·59	+ 0·37
18	6	6·99	2	8·89	— 1·90

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1850.		′ ″		′ ″	″
May 20	8	+ 2 7·86	4	+ 2 7·15	+ 0·71
21	8	7·27	4	7·18	+ 0·09
22	10	7·41	4	7·38	+ 0·03
25 to 27	8	8·04	8	8·96	— 0·92
	Diminished the readings of B and C by 10″ each. W. S. J.				
28	6	+ 2 13·56	4	+ 2 12·22	+ 1·34
29 & 30	8	12·42	7	13·25	— 0·83
31	5	12·41	3	13·91	— 1·50
June 1 to 3	7	12·49	8	13·23	— 0·74
4	7	12·40	4	12·06	+ 0·34
5 to 7	5	12·71	10	12·29	+ 0·42
8	7	12·89	3	12·81	+ 0·08
11	4	12·69	4	12·45	+ 0·24
12 & 13	6	12·51	8	12·77	— 0·26
19	6	12·75	3	11·34	+ 1·41
20 & 21	5	11·62	7	11·62	0·00
22 to 29	5	13·68	15	11·82	+ 1·86
July 1	4	14·83	2	12·94	+ 1·89
2	3	13·67	3	13·49	+ 0·18
3 & 4	4	14·18	6	14·26	— 0·08
5	9	13·95	4	14·43	— 0·48
6 & 7	4	14·36	3	13·81	+ 0·55
8	5	14·06	3	15·47	— 1·41
9 & 10	7	13·56	6	13·99	— 0·43
11 & 12	3	14·06	6	13·87	+ 0·19
13	3	14·41	2	13·30	+ 1·11
18	4	13·53	3	14·11	— 0·58
19 & 20	3	13·65	3	14·08	— 0·43
23 to 25	3	14·23	7	13·65	+ 0·58
26	4	13·75	2	13·06	+ 0·69
27	3	13·76	3	12·75	+ 1·01
29	6	12·70	4	13·76	— 1·06
July 30 to Aug. 2	3	13·47	12	12·78	+ 0·69
5	5	13·19	4	12·81	+ 0·38
6	6	12·54	3	12·01	+ 0·53
7 & 8	6	11·32	6	12·52	— 1·20
9	6	12·08	3	12·58	— 0·50
12	12	12·46	4	11·67	+ 0·79
13	4	12·89	2	13·14	— 0·25
14	6	12·79	3	13·98	— 1·19
15	7	12·19	3	12·16	+ 0·03
19	Found a hair on the fixed wire, removed it carefully, but the Index Error changed.				
20 & 21	10	+ 2 35·98	6	+ 2 35·23	+ 0·75
22 & 23	11	35·55	5	34·75	+ 0·80
24 & 25	5	36·02	3	34·89	+ 1·13
26	6	36·36	4	35·18	+ 1·18
27	6	36·20	3	34·89	+ 1·31
29	4	36·44	3	35·35	+ 1·09

INDEX ERROR OF THE MURAL CIRCLE, (Continued.)

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1850.		′ ″		′ ″	″
Aug. 31 to Sep. 2	5	+ 2 36·20	7	+ 2 35·28	+ 0·92
3	4	35·24	3	35·02	+ 0·22
4	3	35·16	3	35·04	+ 0·12

There being much dust on the Object Glass, took it out and cleaned it.

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
4	3	+ 2 44·77	1	+ 2 43·05	+ 1·72
7 to 10	7	47·72	7	46·44	+ 1·28
11	4	48·55	3	46·56	+ 1·99
23 to 26	8	47·29	10	45·77	+ 1·52
27	6	47·99	3	47·01	+ 0·98
28	3	48·59	2	47·50	+ 1·09
30	6	46·76	3	47·00	— 0·24
Oct. 1	8	46·18	4	46·70	— 0·52
2	5	46·86	2	45·51	+ 1·35

The Instrument must have had a blow between this and previous observations.

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
2	2	+ 3 20·31	1	+ 3 21·62	— 1·31
3	5	20·36	2	21·84	— 1·48
4	4	18·88	4	20·33	— 1·45
5	6	20·73	3	20·85	— 0·12
7	7	21·34	3	20·62	+ 0·72
8 & 9	10	20·35	7	20·21	+ 0·14
10	6	19·29	2	20·33	— 1·04
11 & 12	12	20·25	5	20·01	+ 0·24
14	4	20·43	3	20·56	— 0·13
15	6	19·44	3	19·81	— 0·37
16 & 17	3	17·58	5	19·93	— 2·35
18 & 19	5	20·51	4	20·00	+ 0·51
21	6	21·07	3	22·95	— 1·88
22 & 23	12	21·58	6	22·15	— 0·57
26	12	22·23	3	21·94	+ 0·29
28	12	22·80	3	22·33	+ 0·47
29	10	22·66	2	21·64	+ 1·02
30	9	22·55	3	23·25	— 0·70
31	8	23·16	3	22·59	+ 0·57
Nov. 1	5	22·24	3	23·07	— 0·83
2	8	22·81	2	22·50	+ 0·31
3 to 7	9	22·13	10	22·58	— 0·45
11 & 12	9	23·51	5	24·63	— 1·12
13	13	24·03	3	22·80	+ 1·23
14	2	20·69	1	22·87	— 2·18

Brought back the horizontal wire to coincidence with the Zero of the Micrometer; Index Error changed—also moved vertical wire one turn westward.

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
14 & 15	15	+ 2 23·20	6	+ 2 21·90	+ 1·30

Vertical wire one turn more westward.

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1850.		′ ″		′ ″	″
Nov. 18	12	+ 2 22·08	4	+ 2 21·25	+ 0·83
19	16	22·51	4	20·39	+ 2·12
20	15	21·83	4	20·42	+ 1·41
21	7	20·94	3	20·05	+ 0·89
22	8	21·29	3	21·20	+ 0·09
23	10	21·26	2	20·26	+ 1·00
25	11	20·68	4	20·35	+ 0·33
26	8	21·60	3	20·62	+ 0·98
27	4	19·61	3	19·74	— 0·13

Moved the wire a half turn eastward.

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
28	2	+ 2 21·48	3	+ 2 19·62	+ 1·86
Dec. 3	6	25·38	4	22·02	+ 3·36
4	8	25·80	3	22·46	+ 3·34
5	5	24·78	3	23·48	+ 1·30
6 to 8	9	24·29	6	23·24	+ 1·05

Moved the wire a quarter turn westward.

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
9	4	+ 2 24·35	3	+ 2 23·13	+ 1·22
10	10	23·83	3	21·96	+ 1·87
11	10	23·65	4	21·66	+ 1·99
12	14	23·30	3	22·96	+ 0·34
13	16	22·00	4	21·43	+ 0·57
14 & 15	16	21·64	4	20·98	+ 0·66
16	17	20·30	4	21·19	— 0·89
17	15	20·79	3	21·14	— 0·35
18	5	21·32	3	19·59	+ 1·73
19	11	22·33	4	18·88	+ 3·45
20	9	22·23	4	19·48	+ 2·75
21 & 22	11	21·74	4	20·13	+ 1·61
23 to 26	4	21·58	4	20·41	+ 1·17
1851.					
Jan. 1	3	20·87	1	18·70	+ 2·17
2	16	19·65	4	18·62	+ 1·03
3	18	19·35	4	17·77	+ 1·58
4	10	19·76	3	18·34	+ 1·42
5	3	19·20	1	17·25	+ 1·95
6	15	19·01	4	17·83	+ 1·18
7	9	20·00	3	18·79	+ 1·21
8	15	19·60	4	19·32	+ 0·28
9	12	19·76	4	18·98	+ 0·78
10	16	19·61	4	19·45	+ 0·16
11 to 13	14	19·59	4	19·40	+ 0·19
14	16	19·06	4	19·02	+ 0·04
15	17	18·98	4	18·83	+ 0·15
16	19	19·10	3	19·36	— 0·26
17	8	19·14	2	19·85	— 0·71
18	9	19·36	3	18·95	+ 0·41
19 & 20	16	19·27	5	19·72	— 0·45
21	12	19·19	3	19·42	— 0·23
22	12	19·13	4	18·87	+ 0·26

INDEX ERROR OF THE MURAL CIRCLE, (*Continued.*)

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1851.		′ ″		′ ″	″
Jan. 23	8	+ 2 18·90	3	+ 2 19·22	— 0·32
24	15	18·15	3	19·47	— 1·32
25	11	17·73	3	18·81	— 1·08
26	5	18·73	—	—	—
27	11	17·84	4	18·60	— 0·76
28	16	18·21	4	18·45	— 0·24
29	18	18·39	4	18·02	+ 0·37
30	16	18·67	4	17·96	+ 0·71
31	15	18·90	4	18·75	+ 0·15
Feb. 1	3	18·93	2	18·81	+ 0·12
2	4	18·10	1	18·35	— 0·25
3	9	18·95	3	18·74	+ 0·21
4	11	18·45	2	18·76	— 0·31
5	9	18·41	3	18·01	+ 0·40
6	14	19·34	2	17·97	+ 1·37
7	14	18·53	3	18·22	+ 0·31
8 & 9	14	18·42	3	17·78	+ 0·64
10	15	18·52	3	17·22	+ 1·30
11	9	18·33	3	17·66	+ 0·67
12	10	19·50	3	18·08	+ 1·42
13	15	20·81	2	17·64	+ 3·17
14	12	20·36	3	18·08	+ 2·28
15	7	20·44	2	16·80	+ 3·64
16 & 17	10	20·46	4	18·78	+ 1·68

By Transits of stars from Polaris to α Centauri—the errors of the circle come out.

A.	C.	L.
″ 21·06 W.	″ 3·72 E.	″ 23·74

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
18	10	+ 2 20·12	3	+ 2 19·66	+ 0·46
19	11	20·53	3	19·87	+ 0·66
20	16	20·05	3	18·72	+ 1·33
21	12	19·82	2	18·80	+ 1·02
22 & 23	9	19·59	2	18·64	+ 0·95
24	15	19·63	3	18·38	+ 1·25
25	12	19·93	2	19·02	+ 0·91
26	10	20·40	2	18·16	+ 2·24
27	12	20·59	3	18·42	+ 2·17
28	9	20·06	3	18·55	+ 1·51
Mar. 1	8	21·04	2	18·87	+ 2·17
2	4	17·80	1	16·77	+ 1·03
3	16	19·35	3	18·47	+ 0·88
4	14	20·32	3	18·32	+ 2·00
5	12	20·19	3	19·60	+ 0·59
6	9	20·89	3	19·12	+ 1·77
7 & 8	7	20·21	5	19·03	+ 1·18
9	5	20·85	1	18·15	+ 2·70
10	6	21·16	3	18·68	+ 2·48
12	8	21·27	3	19·59	+ 1·68
13	8	21·29	3	19·92	+ 1·37
14	8	22·16	2	19·91	+ 2·25
15	7	22.37	2	20·45	+ 1·92

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1851. Mar.		′ ″		′ ″	″
16 & 17	4	+ 2 21·54	3	+ 2 19·67	+ 1·87
18	6	21 90	2	21 83	+ 0·07
19	6	22·55	3	20·92	+ 1·63
20	7	23·21	3	20·62	+ 2·59
21	6	22·72	3	21·58	+ 1·14
22	5	23·26	2	21·93	+ 1·33
23	3	21·96	1	20·80	+ 1·16
24	8	22·57	3	21·85	+ 0·72
25	7	22·92	3	21·85	+ 1·07
26	9	22·52	3	21·84	+ 0·68
27	5	22·29	3	21·38	+ 0·91
28	9	22·59	3	20·96	+ 1·63
29	6	23·08	2	22·50	+ 0·58
31	7	22·87	3	22·69	+ 0·18
April 1	10	22·33	3	21·86	+ 0·47
2	10	23·05	3	22·70	+ 0·35
3	8	22·81	3	22·86	— 0·05
4	10	21·93	3	22·01	— 0·08
5	5	21·18	2	21·66	— 0·48
6	4	22·50	1	22·92	— 0·42
7	13	21·52	2	21·97	— 0·45
8	10	22·59	3	21·60	+ 0·99
9	12	22·61	3	21·76	+ 0·85
10	9	22·59	3	22·11	+ 0·48
11	10	23·72	3	22·11	+ 1·61
12 & 13	7	23·15	3	22·44	+ 0·71
14	10	24·06	3	22·39	+ 1·67
15	9	23·74	3	22·42	+ 1·32
16 & 17	9	22·93	4	22·66	+ 0·27
21	6	22·94	1	23·47	— 0·53
22	4	22·04	2	22·20	— 0·16
23	4	22·83	2	22 42	+ 0·41
24	5	23·38	2	22·32	+ 1·06
25 to 27	6	22·34	5	22·64	— 0·30
May 1 to 7	7	22·33	4	21·20	+ 1·13
8	9	21·40	1	21·00	+ 0·40
9	7	22·22	1	21·57	+ 0·65
10 & 11	7	22·44	2	21·26	+ 1·18
12	4	23·21	3	21·97	+ 1·24
13	5	21·53	2	22·34	— 0·81
14	5	20·86	2	21·98	— 1·12
15	5	23·24	1	21·80	+ 1·44
16 & 17	4	22·65	2	22·71	— 0·06
18	3	22·59	1	22·47	+ 0·12
19	4	23·85	2	21·71	+ 2·14
20 & 21	11	23·34	4	22·29	+ 1·05
22	10	23·82	3	22·70	+ 1·12
23	9	23·50	3	21·88	+ 1·62
25	6	23·36	1	21·77	+ 1·59
26	6	23·72	1	21·55	+ 2·17
27	11	24·02	2	22·79	+ 1·23
28	5	24·65	2	23·18	+ 1·47
29	4	23·50	1	22·22	+ 1·28
30 & 31	6	23·85	2	23·29	+ 0·56

INDEX ERROR OF THE MURAL CIRCLE, *(Continued.)*

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1851.		′ ″		′ ″	″
June 1&2	10	+ 2 23·72	3	+ 2 22·90	+ 0·82
3 & 4	4	23·95	5	23·41	+ 0·54
6 & 7	5	23·46	6	22·23	+ 1·23
8 to 12	8	22·85	10	22·80	+ 0·05
13 to 15	7	23·24	5	22·67	+ 0·57
16 & 17	9	24·07	5	22·57	+ 1·50
18	4	23·08	4	22·94	+ 0·14
20 to 23	12	23·19	10	22·25	+ 0·94
24	7	22·75	2	21·19	+ 1·56
28 & 29	5	22·89	2	22·11	+ 0·78
30	7	23·18	4	21·04	+ 2·14
July 1	7	21·21	4	20·41	+ 0·80
2	6	22·24	4	21·75	+ 0·49
3	6	23·08	4	20·95	+ 2·13
4 to 8	5	21·24	9	20·38	+ 0·86
9 & 10	5	22·11	6	19·81	+ 2·30
21	10	24·14	4	21·73	+ 2·41
22 & 23	7	24·08	4	23·24	+ 0·84
24 & 26	7	24·67	7	22·65	+ 2·02
Aug. 5&6	8	25·40	5	23·60	+ 1·80
8 & 9	9	24·58	5	22·73	+ 1·85
11	6	25·52	2	23·38	+ 2·14
12	6	25·28	4	23·25	+ 2·03
13 & 14	11	26·24	6	23·56	+ 2·68
15	8	26·45	4	23·47	+ 2·98
16 & 17	7	26·40	3	24·83	+ 1·57
18	10	27·46	3	25·50	+ 1·96
19 & 20	4	27·24	5	24·94	+ 2·30
27 & 28	8	27·40	5	25·23	+ 2·17
31	7	27·38	1	25·67	+ 1·71
Sept. 2	6	26·83	3	25·37	+ 1·46
3	8	27·61	3	26·40	+ 1·21
4	5	25·89	2	25·61	+ 0·28
5	4	26·73	2	24·79	+ 1·94
6 & 7	6	25·41	2	24·21	+ 1·20
8	5	25·99	2	23·41	+ 2·58
9	7	26·96	2	24·34	+ 2·62
10	5	24·46	2	22·86	+ 1·60
12 & 13	8	24·23	3	23·62	+ 0·61
15	4	23·69	2	23·53	+ 0·16
16	13	23·94	3	22·79	+ 1·15
17	5	23·20	2	23·83	— 0·63
18	7	22·74	2	23·11	— 0·37
19	12	23·10	2	22·42	+ 0·68
20	6	22·99	1	21·32	+ 1·67
21	5	22·08	1	23·67	— 1·59
22	6	22·65	2	22·68	— 0·03
24 & 25	11	22·07	5	21·76	+ 0·31
27 to 30	6	23·75	7	21·57	+ 2·18
Oct. 1	9	24·45	2	22·96	+ 1·49
2 & 3	5	24·13	1	22·30	+ 1·83
6 & 7	4	25·80	5	23·95	+ 1·85
11	5	26·94	1	23·52	+ 3·42
1851.		′ ″		′ ″	″
Oct. 13	7	+ 2 27·77	3	+ 2 25·15	+ 2·62
15 & 16	7	27·09	5	25·57	+ 1·52
17	5	26·72	3	24·59	+ 2·13
18	4	26·51	2	23·57	+ 2·94
20 & 21	6	27·36	5	24·61	+ 2·75
24	9	26·61	3	25·22	+ 1·39
25 & 26	10	26·43	3	24·63	+ 1·80
27	7	26·56	3	24·75	+ 1·81
28	7	24·95	3	23·36	+ 1·59
29	5	25·11	2	23·79	+ 1·32
30	10	24·19	3	23·61	+ 0·58
31	4	24·59	2	23·35	+ 1·24
Nov. 7 to 11	11	30·41	8	27·86	+ 2·55
17 & 18	7	34·12	8	33·92	+ 0·20
19	5	34·65	2	33·49	+ 1·16
20	14	35·02	2	33·34	+ 1·68
21	12	34·48	3	32·75	+ 1·73
22 & 23	8	34·69	2	32·22	+ 2·47
24	12	34·18	3	32·31	+ 1·87
25	14	33·28	3	30·71	+ 2·57
26 & 27	13	30·80	5	30·02	+ 0·78
28	14	30·80	2	29·80	+ 1·00
Dec. 1	5	29·97	2	28·50	+ 1·47
3 & 4	8	28·80	5	28·63	+ 0·17
5	9	28·37	3	27·66	+ 0·71
6 & 7	7	27·52	3	26·84	+ 0·68
8	10	26·99	3	26·22	+ 0·77
9	8	26·21	3	26·77	— 0·56
10 & 11	7	26·85	4	26·71	+ 0·14
15	5	26·87	3	26·58	+ 0·29
16	8	26·98	3	26·65	+ 0·33
17 & 18	11	27·70	6	26·55	+ 1·15
19	6	26·66	3	27·37	— 0·71
20	10	26·86	1	25·32	+ 1·54
21	6	25·68	1	26·25	— 0·57
22	12	25·59	3	25·19	+ 0·40
23 & 24	9	25·13	5	24·45	+ 0·68
1852.					
Jan. 1&2	6	23·80	2	21·01	+ 2·79
6	7	22·79	2	22·41	+ 0·38
7 & 8	5	21·75	4	23·63	— 1·88
9 to 11	9	22·42	4	23·56	— 1·14
12 to 15	11	21·48	3	21·83	— 0·35
16	7	21·11	2	22·01	— 0·90
17 & 18	6	20·15	2	23·16	— 3·01
19	6	20·01	2	21·83	— 1·82
20 & 21	13	20·92	4	21·27	— 0·35
22 & 23	7	21·00	4	20·60	+ 0·40
24	6	22·82	2	22·59	+ 0·23
25 & 26	9	23·66	5	22·96	+ 0·70
27	5	23·01	4	22·63	+ 0·38
28	6	23·93	4	22·71	+ 1·22
29	7	22·75	4	22·09	+ 0·66
30	8	22·86	4	22·71	+ 0·15

INDEX ERROR OF THE MURAL CIRCLE, (Continued)

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1852.		′ ″		′ ″	″
Jan. 31	4	+ 2 22·92	3	+ 2 22·61	+ 0·31
Feb. 1 & 2	6	23·11	3	22·87	+ 0·24
3 & 4	6	23·04	6	22·99	+ 0·05
5 & 6	7	23·62	5	22·99	+ 0·63
7 to 9	7	23·04	6	23·94	— 0·90
10	8	24·29	3	22·59	+ 1·70
11	5	24·23	3	23·81	+ 0·42
12	8	23·67	3	23·15	+ 0·52
13	7	23·89	3	23·83	+ 0·06
14	6	23·55	2	23·30	+ 0·25
15 & 16	7	23·56	4	23·04	+ 0·52
17 & 18	7	23·56	6	23·13	+ 0·43
19 & 20	7	24·79	6	23·98	+ 0·81
21 to 23	9	24·40	6	24·08	+ 0·32
24	4	24·56	3	24·25	+ 0·31
25	6	23·90	3	23 79	+ 0·11
26	9	24·56	3	24·32	+ 0·24
27	5	24·24	3	22·99	+ 1·25
28	6	24·22	2	24·77	— 0·55
Mar. 1	8	24·98	2	24·30	+ 0·68
2	11	25·39	2	25·05	+ 0·34
3	10	24·94	3	24·18	+ 0·76
4	11	25·33	2	24·46	+ 0·87

Found some dirt hanging on the horizontal wire, removed it. W. S. J.

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
5	12	+ 2 26·73	3	+ 2 26·20	+ 0·53
6 & 7	11	26·69	3	25·53	+ 1·16
8	5	25·96	3	24·12	+ 1·84
9	9	25·56	3	24·55	+ 1·01
10	8	25 37	3	23·77	+ 1·60
11	7	25·62	3	24·17	+ 1·45
12	7	25·04	2	24·59	+ 0·45
13	6	25·31	2	24·64	+ 0 67
15	6	25·59	3	24·66	+ 0·93
16 & 17	11	25·50	5	23·49	+ 2·01
19 to 21	7	26·31	6	24·02	+ 2·29
22	7	26·59	2	25·13	+ 1·46
23	11	27·91	3	25·37	+ 2·54
24 & 25	7	26·21	5	25·44	+ 0·77
26	10	27·18	3	26·01	+ 1·17
27	9	27·48	2	25·10	+ 2·38
29	10	28·23	2	26·63	+ 1·60
30	9	27·72	2	26·66	+ 1·06
31	12	27·70	3	26·18	+ 1·52
April 1	11	28·56	3	27·75	+ 0·81
2	11	29·76	2	27·63	+ 2·13
3	9	29·58	2	27·59	+ 1·99
5 & 6	10	28·95	6	27·46	+ 1·49
7	7	29·40	3	27·70	+ 1·70
8	7	29·00	2	27·53	+ 1·47
13	6	29·81	3	28·53	+ 1·28

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1852.		′ ″		′ ″	″
April 14	6	+ 2 29·83	3	+ 2 28·86	+ 0·97
15	5	28·28	3	27·45	+ 0·78
16 & 17	9	30·59	5	28·33	+ 2·26
19	5	31·61	3	28·77	+ 2·84
20 & 21	11	30·05	6	27·91	+ 2·14
22	7	29·69	2	30·26	— 0·57
23 & 24	8	30·38	5	28·91	+ 1·47
26 & 27	8	30·50	6	30·42	+ 0·08
28	5	30·28	3	30·91	— 0·63
29	4	30·46	3	30·09	+ 0·37
Apr. 30 to May 3	6	31·52	6	30·13	+ 1·39
7	5	30·95	2	30·64	+ 0·31
8 to 13	9	30·60	13	29·90	+ 0·70
17 & 18	6	29·61	6	29·41	+ 0·20
20	6	31·57	2	28·61	+ 2·96
21 to 25	8	30·33	8	28·04	+ 2·29
26	4	30·47	3	29·01	+ 1·46
27 & 28	5	30·52	6	28·57	+ 1·95
29 to 31	6	31·01	6	31·02	— 0·01
June 1	5	30 94	3	30·81	+ 0·13
2	4	31·37	3	31·69	— 0·32
3	9	32·73	3	32·30	+ 0·43
4	9	31·86	3	31·42	+ 0·44
5	8	36·16			

Microscope C has suddenly altered its reading 15″ in defect—cause unknown.

6 Corrected the reading of the Microscope C + 15″

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
7	10	+ 2 32·69	3	+ 2 32·58	+ 0·11
8	6	32·28	3	31·57	+ 0·71
9	9	32·14	3	31·29	+ 0·85
10	6	30·78	3	32·09	— 1·31
11	4	32·03	3	31·34	+ 0·69
12 to 14	6	31·88	6	29·90	+ 1·98
22 to 28	5	32·09	12	31·66	+ 0·43
July 4 to 10	8	32·20	11	32·66	— 0·46
12	7	33·93	3	33·27	+ 0·66
13	6	33·46	2	31·80	+ 1·66
14	5	32·63	3	33·47	— 0·84
15	10	32·75	3	33·59	— 0·84
16	4	33·15	2	33·57	— 0·42
17 & 18	5	33·19	3	33·12	+ 0·07
19	9	32·81	2	33·65	— 0·84
20	5	32·87	2	31·49	+ 1·38
22 & 23	4	32·43	3	32·64	— 0·21
25 to 27	11	32·44	6	33·55	— 1·11
Aug. 6 to 9	10	32·87	7	33·76	— 0·89
10	5	34·05	2	34·75	— 0·70

INDEX ERROR OF THE MURAL CIRCLE, (*Continued.*)

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1852.		′ ″		′ ″	″
Aug. 11	5	+ 2 32·80	3	+ 2 34·25	— 1·45
12 to 17	6	32·79	12	33·24	— 0·45
23	5	31·91	2	32·10	— 0·19
24	10	32·81	2	31·43	+ 1·38
25	15	32·53	3	31·58	+ 0·95
26	17	32·48	3	32·06	+ 0·42
27	13	31·90	3	32·46	— 0·56
28	11	31·52	2	32·80	— 1·28
Sept. 1	5	31·01	2	32·10	— 1·09
2	7	30·47	3	30·72	— 0·25
3 to 6	12	30·59	5	29·33	+ 1·26
7	10	30·91	3	31·23	— 0·32
8	3	31·00	2	31·89	— 0·89
15	5	32·89	3	32·95	— 0·06
16 & 17	5	33·22	6	33·39	— 0·17
18 to 21	6	32·29	6	32·93	— 0·64
22	10	33·51	2	32·19	+ 1·32
23 & 24	8	33·38	5	33·25	+ 0·13
25	8	34·74	2	34·45	+ 0·29
26 & 27	10	34·37	4	34·19	+ 0·18
28 & 29	12	34·88	6	33·33	+ 1·55
30	7	33·92	2	34·14	— 0·22
Oct. 1	12	34·01	3	33·35	+ 0·66
2 & 3	9	33·84	3	33·44	+ 0·40
4	6	33·09	3	33·48	— 0·39
5	6	32·28	3	33·32	— 1·04
6	4	32·92	3	33·72	— 0·80
10 & 11	7	37·70	3	37·56	+ 0·14
12	7	38·48	2	36·91	+ 1·57
13	7	39·56	3	38·16	+ 1·40
14	6	39·88	3	39·28	+ 0·60
15	7	36·65	2	35·71	+ 0·94
16 to 18	5	40·08	4	38·22	+ 1·86

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
1852. Oct.		′ ″		′ ″	″
23 to 25	6	+ 2 41·57	5	+ 2 40·42	+ 1·15
26	6	40·69	3	40·16	+ 0·53
27	10	40·51	2	39·32	+ 1·19
28	8	39·74	3	39·52	+ 0·22
29	5	39·15	3	40·60	— 1·45
Oct. 30 to Nov. 4	8	39·26	13	40·50	— 1·24
7 & 8	8	44·95	1	44·21	+ 0·74
9 to 11	6	46·20	6	46·25	— 0·05
12 to 16	8	46·43	9	48·90	— 2·47
19 to 21	9	48·94	6	49·64	— 0·70
22	5	49·48	2	48·73	+ 0·75
23 & 24	10	48·52	5	49·66	— 1·14
25	7	47·94	3	50·57	— 2·63

The Index Error has altered several seconds without any apparent cause.

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
Dec. 3 & 4	2	+ 2 61·66	3	+ 2 61·48	+ 0·18
5 & 6	3	54·17	4	55·20	— 1·03

A fine cobweb was seen to be attached the horizontal wire; removed it carefully; also took out and cleaned the Object Glass.

N. B.—This perhaps accounts for the change on 3d.

Date.	No. of Obs.	Index Error by Stars.	No. of Obs.	Index Error by Reflecting Collimator.	Difference.
7	6	+ 2 55·85	3	+ 2 56·56	— 0·71
8	4	56·03	3	57·03	— 1·00
9 & 10	8	56·26	5	55·98	+ 0·28
11 & 12	7	54·59	3	55·84	— 1·25
13 to 15	5	54·88	4	56·29	— 1·41
16 to 20	11	54·05	10	56·15	— 2·10
21	4	53·24	2	56·85	— 3·61
23 & 24	2	54·20	4	55·69	— 1·49

RIGHT ASCENSION AND NORTH POLAR DISTANCE

OF

THE SUN, MOON, AND PLANETS,

AS DEDUCED FROM

THE MADRAS OBSERVATIONS,

COMPARED WITH THE TABLES.

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE.

Mean Solar Time of Observation.				A. R. from Observation.			A. R. from N. A.	Error of N. A.	N. P. D. from Observation.			N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.	
d.	h.	m.	s.	h.	m.	s.	s.	s.	°	′	″	″	″	′	″
4	0	4	54·2	18	56	57·98	58·11	+ 0·13	112	48	39·07	36·00	— 3·07	16	0·62
5	0	5	21·6	19	1	22·02	22·22	+ 0·20	112	42	16·18	22·90	+ 6·72	16	2·38
6	0	5	49·2		5	46·29	45·90	— 0·39	112	35	45·67	42·60	— 3·07	16	0·64
7	0	6	15·4		10	9·05	9·14	+ 0·09	112	28	30·59	35·50	+ 4·91	16	0·68
8	0	6	41·5		14	31·80	31·89	+ 0·09	112	21	1·37	1·90	+ 0·53	16	4·14
9	0	7	7·2		18	54·15	54·12	— 0·03	—			—	—	16	3·10
10	0	7	32·4		23	15·98	15·80	— 0·18	112	4	32·48	35·90	+ 3·42	16	3·42
11	0	7	57·0		27	37·23	36·93	— 0·30	111	55	43·59	43·90	+ 0·31	16	3·10
12	0	8	20·9		31	57·77	57·45	— 0·32	111	46	23·81	26·30	+ 2·49	16	2·00
13	0	8	44·1		36	17·63	17·32	— 0·31	111	36	39·38	43·40	+ 4·02	16	2·32
14	0	9	6·7		40	36·84	36·57	— 0·27	—			—	—	16	2·16
16	0	9	49·7		49	13·14	13·01	— 0·13	—			—	—	16	2·00
17	0	10	10·7		53	30·61	30·19	— 0·42	—			—	—	16	1·92
18	0	10	30·6		57	47·17	46·65	— 0·52	110	41	61·23	59·20	— 2·03	16	3·14
19	0	10	49·8	20	2	2·95	2·37	— 0·58	110	29	48·68	50·50	+ 1·82	16	1·48
20	0	11	7·9		6	17·66	17·35	— 0·31	110	17	18·89	18·60	— 0·29	16	2·45
21	0	11	25·7		10	32·08	31·62	— 0·46	—			—	—	—	
22	0	11	42·6		14	45·54	45·09	— 0·45	109	51	7·33	6·60	— 0·73	16	2·85
23	0	11	58·6		18	58·14	57·81	— 0·33	—			—	—	16	1·30
24	0	12	14·0		23	10·19	9·75	— 0·44	—			—	—	—	
25	0	12	28·4		27	21·22	20·91	— 0·31	—			—	—	16	0·08
27	0	12	55·3		35	41·24	40·88	— 0·36	108	39	13·00	14·60	+ 1·60	16	1·50
28	0	13	7·5		39	50·01	49·67	— 0·34	108	23	46·91	49·70	+ 2·79	16	3·92
29	0	13	19·0		43	58·09	57·68	— 0·41	108	8	4·15	4·80	+ 0·65	16	2·85
30	0	13	29·4		48	5·09	4·87	— 0·22	—			—	—	16	2·94
31	0	13	39·3		52	11·62	11·26	— 0·36	107	35	32·10	36·70	+ 4·60	16	2·98
1	0	13	48·2	20	56	17·09	16·84	— 0·25	107	18	52·22	54·40	+ 2·18	16	2·70
2	0	13	56·6	21	0	22·09	21·61	— 0·48	107	1	53·65	53·70	+ 0·05	16	0·38
3	0	14	4·0		4	26·01	25·57	— 0·44	106	44	32·83	35·10	+ 2·27	16	1·88
4	0	14	10·4		8	29·02	28·70	— 0·32	106	26	57·84	59·00	+ 1·16	16	2·50
5	0	14	16·2		12	31·38	31·01	— 0·37	106	9	1·33	5·80	+ 4·47	16	2·30
6	0	14	21·3		16	33·04	32·50	— 0·54	—			—	—	16	2·05
7	0	14	25·3		20	33·55	33·17	— 0·38	105	32	30·43	29·90	— 0·53	16	0·42
8	0	14	28·5		24	33·40	33·03	— 0·37	105	13	45·25	48·10	+ 2·85	16	2·60
9	0	14	31·1		28	32·55	32·07	— 0·48	104	54	50·39	50·90	+ 0·51	16	2·23
11	0	14	33·5		36	28·03	27·70	— 0·33	104	16	6·83	12·10	+ 5·27	16	1·80
12	0	14	33·3		40	24·33	24·32	— 0·01	103	56	28·30	31·40	+ 3·10	16	2·12
13	0	14	33·0		44	20·68	20·15	— 0·53	—			—	—	16	1·40
14	0	14	31·1		48	15·33	15·20	— 0·13	103	16	21·24	29·10	+ 7·86	16	4·10
15	0	14	29·0		52	9·68	9·41	— 0·27	102	56	5·36	8·50	+ 3·14	16	2·60
18	0	14	17·8	22	3	48·27	47·87	— 0·40	—			—	—	—	
19	0	14	12·6		7	39·62	39·22	— 0·40	101	32	38·73	45·70	+ 6·97	16	1·15
20	0	14	6·8		11	30·26	29·90	— 0·36	—			—	—	16	0·40
22	0	13	53·2		19	9·73	9·24	— 0·49	100	28	13·13	18·20	+ 5·07	16	3·34
23	0	13	45·3		22	58·36	57·96	— 0·40	106	6	28·52	29·20	+ 0·68	16	1·90
24	0	13	36·9		26	46·51	46·06	— 0·45	99	44	25·23	30·90	+ 5·67	16	2·90
25	0	13	28·1		30	34·24	33·57	— 0·67	99	22	25·24	23·70	— 1·54	16	1·06
26	0	13	18·3		34	20·91	20·50	— 0·41	98	59	59·33	68·00	+ 8·67	—	
27	0	13	7·7		38	6·89	6·88	— 0·01	—			—	—	16	1·06
28	0	12	57·3		41	53·02	52·69	— 0·33	98	15	10·78	12·80	+ 2·02	16	2·88
29	0	12	46·3		45	38·51	37·99	— 0·52	97	52	26·76	34·00	+ 7·24	16	1·70
1	0	12	34·4	22	49	23·10	22·80	— 0·30	97	29	47·14	48·40	+ 1·26	16	1·90
2	0	12	22·3		53	7·50	7·11	— 0·39	97	6	49·80	56·40	+ 6·60	16	1·64
3	0	12	9·4		56	51·18	50·93	— 0·25	—			—	—	—	
4	0	11	56·4	23	0	34·66	34·29	— 0·37	96	20	49·50	54·40	+ 4·90	16	3·98

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, (*Continued*)

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1848.	*d.*	*h.*	*m.*	*s.*	*h. m. s.*	*s.*	*s.*	° ′ ″	″	″	′ ″
Mar.	5	0	11	42·6	23 4 17·36	17·21	— 0·15	——	—	—	16 3·14
	6	0	11	28·6	7 59·88	59·68	— 0·20	95 34 34·73	31·50	— 3·23	16 2·30
	7	0	11	14·1	11 41·92	41·75	— 0·17	95 11 5·89	13·30	+ 7·41	16 2·56
	8	0	10	59·2	15 23·56	23·42	— 0·14	——	—	—	16 3·08
	9	0	10	44·0	19 4·80	4·70	— 0·10	94 24 21·50	24·90	+ 3·40	16 1·10
	10	0	10	28·4	22 45·71	45·61	— 0·10	94 0 56·38	55·70	— 0·68	16 2·12
	11	0	10	12·5	26 26·33	26·18	— 0·15	93 37 20·31	23·60	+ 3·29	16 2·16
	12	0	9	56·1	30 6·47	6·41	— 0·06	——	—	—	16 1·10
	13	0	9	39·4	33 46·25	46·33	+ 0·08	92 50 14·67	12·30	— 2·37	16 2·90
	14	0	9	22·6	37 25·97	25·97	0·00	92 26 31·22	34·00	+ 2·78	16 1·96
	15	0	9	5·5	41 5·39	5·33	— 0·06	——	—	—	16 1·40
	16	0	8	48·1	44 44·46	44·44	— 0·02	91 39 5·49	13·50	+ 8·01	16 2·92
	17	0	8	30·7	48 23·62	23 32	— 0·30	91 15 30·09	32·10	+ 2·01	16 1·38
	18	0	8	12·9	52 2·27	2·02	— 0·25	90 51 42·90	50·40	+ 7·50	16 2·02
	19	0	7	55·3	55 41·22	40·54	— 0·68	——	—	—	16 3·58
	20	0	7	36·8	59 19·15	18·89	— 0·26	90 4 25·15	27·50	+ 2·35	16 1·82
	21	0	7	18·2	0 2 57·08	57·13	+ 0·05	89 40 45·40	46·90	+ 1·50	16 2·80
	22	0	7	0·0	6 35·40	35·25	— 0·15	89 17 7·25	7·50	+ 0·25	16 2·14
	23	0	6	41·6	10 13·51	13·31	— 0·20	88 53 29·49	29·60	+ 0·11	16 0·82
	24	0	6	23·0	13 51·37	51·29	— 0·08	88 29 47·74	53·30	+ 5·56	16 2·14
	25	0	6	4·5	17 29·39	29·27	— 0·12	88 6 14·51	19·10	+ 4·59	16 2·23
	27	0	5	27·4	24 45·29	45·20	— 0·09	87 19 15·57	18·50	+ 2·93	16 2·98
	28	0	5	8·8	28 23·22	23·20	— 0·02	——	—	—	16 2·60
	29	0	4	50·4	32 1·26	1·24	— 0·02	——	—	—	16 3·18
	30	0	4	32·1	35 39·44	39·36	— 0·08	86 9 9·60	12·00	+ 2·40	16 2·45
	31	0	4	13·7	39 17·59	17·58	— 0·01	85 45 51·85	57·70	+ 5·85	16 1·35
April	1	0	3	55·4	0 42 55·75	55·90	+ 0·15	85 22 45·16	48·00	+ 2·84	16 2·80
	3	0	3	19·5	50 12·88	12·91	+ 0·03	——	—	—	16 1·70
	6	0	2	26·6	1 1 9·54	9·59	+ 0·05	——	—	—	16 1·78
	7	0	2	9·4	4 48·83	48·86	+ 0·03	——	—	—	16 0·00
	9	0	1	36·0	12 8·40	8·04	— 0·36	——	—	—	16 2·63
	10	0	1	19·2	15 48·07	47·98	— 0·09	——	—	—	16 2·32
	11	0	1	2·4	19 27·85	28·18	+ 0·33	81 36 42·19	41·90	— 0·29	16 2·50
	12	0	0	46·9	23 8·80	8·65	— 0·15	81 14 45·28	46·10	+ 0·82	15 58·00
	13	0	0	31·0	26 49·44	49·39	— 0·05	80 52 57·69	59·20	+ 1·51	16 2·63
	14	0	0	15·4	30 30·29	30·47	+ 0·18	80 31 24·13	21·40	— 2·73	16 2·40
	15	0	0	0·4	34 11·87	11·86	— 0·01	——	—	—	16 0·62
	16	23	59	31·2	41 35·77	35·71	— 0·06	79 27 24·37	25·90	+ 1·53	16 3·45
	17	23	59	17·2	45 18·19	18·18	— 0·01	79 6 28·39	27·80	— 0·59	16 5·10
	18	23	59	3·6	49 1·17	1·07	— 0·10	——	—	—	16 3·16
	19	23	58	50·3	52 44·42	44·37	— 0·05	78 25 3·39	4·20	+ 0·81	16 3·00
	20	23	58	37·5	56 28·13	28·10	— 0·03	——	—	—	16 1·80
	23	23	58	1·9	2 7 42·06	42·06	0·00	77 4 35·36	35·80	+ 0·44	16 2·08
	24	23	57	50·9	11 27·59	27·69	+ 0·10	76 44 60·06	59·40	— 0·66	16 2·65
	27	23	57	21·4	22 47·71	47·66	— 0·05	——	—	—	16 3·72
	28	23	57	12·5	26 35·23	35·35	+ 0·12	75 28 47·60	46·80	— 0·80	16 2·60
	29	23	57	4·2	30 23·51	23·60	+ 0·09	——	—	—	16 2·33
	30	23	56	56·4	34 12·27	12·41	+ 0·14	74 52 4·39	4·70	+ 0·41	16 3·28
May	1	23	56	49·2	2 38 1·57	1·75	+ 0·18	74 34 7·33	5·80	— 1·53	16 1·26
	2	23	56	42·7	41 51·59	51·64	+ 0·05	74 16 23·60	22·20	— 1·40	16 2·45
	3	23	56	36·5	45 41·90	42·08	+ 0·18	73 58 54·64	54·20	— 0·44	16 2·43
	4	23	56	31·0	49 32·99	33·09	+ 0·10	73 41 39·61	42·00	+ 2·39	16 0·80
	5	23	56	25·9	53 24·38	24·65	+ 0·27	73 24 46·39	45·90	— 0·49	16 2·23
	6	23	56	21·4	57 16·47	16·78	+ 0·31	——	—	—	16 1·90
	7	23	56	17·6	3 1 9·19	9·46	+ 0·27	72 51 43·51	43·80	+ 0·29	16 2·32

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, (*Continued.*)

Mean Solar Time of Observation					A. R. from Observation.			A. R. from N. A.	Error of N. A.	N. P. D. from Observation.			N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.	
1848.	d.	h.	m.	s.	h.	m.	s.	s.	s.	°	′	″	″	″	′	″
May	8	23	56	14·6	3	5	2·75	2·68	— 0·07	72	35	36·47	38·40	+ 1·93	16	2·08
	9	23	56	11 8		8	56·47	56·47	0·00	72	19	50·12	50·80	+ 0·18	16	1·94
	10	23	56	9·5		12	50·72	50·81	+ 0·09	72	4	17·47	20·10	+ 2·63	16	2·60
	11	23	56	7·7		16	45·48	45·71	+ 0·23	—			—	—	16	2·70
	12	23	56	6·8		20	41·19	41·17	— 0·02	71	34	15·80	14·00	— 1·80	16	3·12
	13	23	56	6·2		24	37 10	37·20	+ 0·10	—			—	—	—	
	14	23	56	6·2		28	33·67	33·77	+ 0·10	71	5	23·95	22·30	— 1·65	16	3·74
	15	23	56	7·1		32	31·17	30 91	— 0·26	70	51	32·11	25·00	— 7·11	16	3·45
	16	23	56	7·8		36	28·37	28·61	+ 0·24	70	37	48·75	47·20	— 0·55	16	3·05
	17	23	56	9·6		40	26·71	26·87	+ 0·16	70	24	31·28	29·10	— 2·18	16	3·65
	18	23	56	11·9		44	25·63	25·69	+ 0·06	70	11	31·96	30·80	— 1·16	16	2·94
	19	23	56	14·6		48	24·83	25·07	+ 0·24	69	58	54·53	52·80	— 1·73	16	2·10
	20	23	56	17·8		52	24·64	25·00	+ 0·36	—			—	—	—	
	22	23	56	26·4	4	0	26 35	26·50	+ 0·15	—			—	—	—	
	23	23	56	31·3		4	27·88	28·07	+ 0·19	—			—	—	—	
	24	23	56	36·9		8	30·04	30·17	+ 0·13	—			—	—	—	
	25	23	56	43·0		12	32·68	32·80	+ 0·12	68	50	20·85	21·90	+ 1·05	16	0·78
	26	23	56	49·8		16	35·83	35·91	+ 0·08	68	40	12·61	11·70	— 0·91	16	1·90
	28	23	57	4·0		24	43·38	43·63	+ 0·25	—			—	—	—	
	30	23	57	20·4		32	52·97	53·20	+ 0·23	—			—	—	16	2·60
June	1	23	57	38·7	4	41	4·38	4·46	+ 0·06	—			—	—	16	2·43
	4	23	58	8·3		53	23·82	24·17	+ 0·35	67	25	37·66	36·20	— 1·46	16	1·66
	6	23	58	30·2	5	1	38·91	38·95	+ 0·04	67	13	26·94	18·00	— 8·94	16	2·38
	7	23	58	41·0		5	46·22	46·75	+ 0·53	67	7	42·85	44·70	+ 1·85	16	2·16
	8	23	58	52·4		9	54·23	54·80	+ 0·57	67	2	35·89	35 60	— 0·29	16	3·18
	9	23	59	4·2		14	2·61	3·08	+ 0·47	66	57	50·53	50·70	+ 0·17	16	2·08
	12	23	59	41·0		—		—	—	66	46	2·01	2·30	+ 0·29	16	3·05
	13	23	59	53·0		—		—	—	66	42	58·45	55·10	— 3·35	16	2·50
	20	0	1	9·7		55	34·01	34·21	+ 0·20	66	32	51·94	51·00	— 0·94	16	3·12
	21	0	1	22·3		59	43·24	43·73	+ 0·49	66	32	36·53	37·10	+ 0·57	16	3·92
	22	0	1	35·5	6	3	53·03	53·24	+ 0·21	66	32	49·10	48·00	— 1·10	16	2·65
	23	0	1	48·1		8	2 25	2·74	+ 0·49	66	33	23·14	23·80	+ 0·66	16	1·68
	26	0	2	26·5		20	30·34	30·79	+ 0·45	66	37	39·45	39·40	— 0·05	16	2·45
	27	0	2	39·3		24	39·78	39·93	+ 0·15	60	39	55·94	54·00	— 1·94	15	57·58
	30	0	3	15·6		37	5·87	6·36	+ 0·49	66	49	7·45	5·00	— 2·45	16	0·42
July	1	0	3	27·5	6	41	14·31	14·75	+ 0·44	66	51	60·34	57·50	— 2·84	16	0·62
	2	0	3	39·2		45	22·60	22·88	+ 0·28	—			—	—	16	0·55
	4	0	4	1·4		53	38·02	38·29	+ 0·27	—			—	—	16	0·48
	5	0	4	12·3		57	45·45	45·50	+ 0·05	—			—	—	16	0·42
	6	0	4	21·9	7	1	51·70	52·36	+ 0·66	—			—	—	16	2·32
	7	0	4	32·0		5	58·27	58·87	+ 0·60	—			—	—	16	3·34
	11	0	5	7·7		22	20·39	20·70	+ 0·31	—			—	—	16	1·88
	19	0	5	55·9		54	41·15	41·64	+ 0·49	69	9	28·13	30·10	+ 1·97	16	3·50
	22	0	6	5·9	8	6	40·84	40·92	+ 0·08	—			—	—	16	2·88
	23	0	6	8·1		10	39·57	39·59	+ 0·02	—			—	—	16	2·00
	24	0	6	9·3		14	37·34	37·68	+ 0·34	70	8	30·54	30·70	+ 0·16	16	1·38
	25	0	6	10·1		18	34·76	35·22	+ 0·46	70	21	18·08	19·60	+ 1·52	16	1·15
	26	0	6	10·5		22	31·77	32·19	+ 0·42	70	34	27·24	28·20	+ 0·96	16	2·76
	27	0	6	10·9		26	28·66	28·58	— 0·08	70	47	54·64	56·00	+ 1·36	16	1·96
	28	0	6	10·0		30	24·30	24·37	+ 0·07	71	1	47·15	42·90	— 4·25	15	59·62
	30	0	6	6·5		38	13·90	14·20	+ 0·30	—			—	—	16	0·95
	31	0	6	4·2		42	8·12	8·21	+ 0·09	71	44	54·67	55·40	+ 0·73	16	3·94
Aug.	1	0	6	0·8	8	46	1·31	1·61	+ 0·30	71	59	55·09	55·80	+ 0·71	16	3·48
	4	0	5	47·6		57	37·72	38·15	+ 0·43	72	46	41·90	41·60	— 0·30	—	

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, (*Continued.*)

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1848.	*d.*	*h.*	*m.*	*s.*	*h. m. s.*	*s.*	*s.*	° ′ ″	″	″	′ ″
Aug.	9	0	5	13·9	9 16 46·73	46·76	+ 0·03	—	—	—	16 1·18
	10	0	5	5·3	20 34·59	34·66	+ 0·07	—	—	—	16 1·15
	11	0	4	56·0	24 21·85	22·00	+ 0·15	74 45 19·88	19·30	− 0·58	16 3·16
	12	0	4	46·	—	—	—	75 3 16·18	17·00	+ 0·82	16 1·86
	15	0	4	13·6	39 25·59	25·63	+ 0·04	75 58 33·52	34·50	+ 0·98	16 1·96
	16	0	4	1·5	43 9·89	10·19	+ 0·30	—	—	—	16 3·32
	23	0	2	24·6	10 9 8·67	8·58	− 0·09	—	—	—	—
	24	0	2	8·8	12 49·40	49·43	+ 0·03	78 55 59·04	58·40	− 0·64	16 1·28
	25	0	1	52·3	16 29·39	29·90	+ 0·51	79 16 39·05	38·40	− 0·65	16 0·42
	27	0	1	19·6	23 49·77	49·66	− 0·11	—	—	—	16 0·15
	28	0	1	2·	—	—	—	80 19 36·86	38·50	+ 1·64	16 1·88
	31	0	0	8·5	38 24·62	24·83	+ 0·21	81 24 2·45	2·30	− 0·15	16 2·74
Sept.	5	23	58	13·3	11 0 8·42	8·33	− 0·09	83 36 25·47	23·40	− 2·07	16 2·00
	6	23	57	52·9	3 44·54	44·70	+ 0·16	83 58 48·21	50·80	+ 2·59	16 2·00
	8	23	57	12·2	10 56·79	56·82	+ 0·03	84 44 2·65	3·00	+ 0·35	16 2·34
	9	23	56	51·8	14 32·43	32·64	+ 0·21	—	—	—	15 59·14
	10	23	56	30·6	18 8·23	8·30	+ 0·07	—	—	—	16 1·64
	12	23	55	48·8	25 19·41	19·30	− 0·11	—	—	—	—
	13	23	55	27·6	28 54·67	54·69	+ 0·02	86 38 31·43	30·70	− 0·73	16 1·75
	14	23	55	6·4	32 29·97	30·02	+ 0·05	87 1 35·03	36·70	+ 1·67	16 2·58
	18	23	53	41·8	46 51·40	51·33	− 0·07	88 34 32·53	31·40	− 1·13	16 3·90
	19	23	53	21·1	50 27·18	26·77	− 0·41	88 57 48·29	51·30	+ 3·01	16 0·33
	21	23	52	38·8	57 37·77	37·92	+ 0·15	89 44 35·79	36·00	+ 0·21	16 1·75
	22	23	52	18·3	12 1 13·82	13·68	− 0·14	90 7 59·24	60·20	+ 0·96	16 3·16
	25	23	51	17·1	12 2·05	1·91	− 0·14	91 18 17·74	15·90	− 1·84	16 1·35
	26	23	50	57·1	15 38·58	38·34	− 0·24	91 41 40·41	41·00	+ 0·59	16 2·98
	27	23	50	37·0	19 15·04	15·04	0·00	92 5 5·43	5·30	− 0·13	16 1·88
	28	23	50	17·	—	—	—	92 28 28·97	28·60	− 0·37	16 0·48
Oct.	1	23	49	20·2	12 33 44·28	44·09	− 0·19	93 38 28·21	28·50	+ 0·29	16 3·20
	3	23	48	43·	—	—	—	94 24 56·90	56·40	− 0·50	16 2·27
	6	23	47	50·6	51 57·20	57·36	+ 0·16	95 34 16·18	12·80	− 3·38	16 2·27
	10	23	46	46·8	13 6 39·35	38·97	− 0·38	97 5 32·99	31·90	− 1·09	—
	11	23	46	31·7	10 20·76	20·55	− 0·21	97 28 8·81	8·00	− 0·81	16 3·14
	12	23	46	17·3	14 2·94	2·62	− 0·32	97 50 34·90	38·00	+ 3·10	16 2·52
	13	23	46	3·4	17 45·49	45·23	− 0·26	98 13 1·44	1·50	+ 0·06	16 1·57
	15	23	45	37·2	25 12·30	12·12	− 0·18	98 57 26·50	27·40	+ 0·90	16 5·30
	17	23	45	13·5	32 41·43	41·40	− 0·03	99 41 25·36	22·90	− 2·46	16 1·88
	18	23	45	2·5	36 27·24	26·96	− 0·28	100 3 8·30	8·30	0·00	16 2·90
	19	23	44	52·2	40 13·48	13·20	− 0·28	100 24 46·86	44·90	− 1·96	16 2·85
	20	23	44	42·2	43 59·97	60·10	+ 0·13	100 46 12·69	12·40	− 0·29	15 56·25
	21	23	44	33·7	47 47·96	47·67	− 0·29	—	—	—	16 2·25
	22	23	44	25·4	51 36·25	35·96	− 0·29	101 28 38·97	38·30	− 0·67	16 4·65
Nov.	1	23	43	48·4	14 30 19·59	19·39	− 0·20	104 49 20·99	21·00	+ 0·01	16 1·40
	5	23	43	48·2	46 10·67	10·57	− 0·10	106 8 12·85	14·90	+ 2·05	16 2·25
	6	23	43	51·5	50 10·50	10·39	− 0·11	106 21 1·03	3·90	+ 2·87	16 1·66
	10	23	44	12·7	15 6 18·00	18·07	+ 0·07	107 29 32·71	30·60	− 2·11	16 2·54
	12	23	44	29·	—	—	—	108 1 55·82	56·90	+ 1·08	16 3·54
	17	23	45	23·4	35 4·74	4·33	− 0·41	—	—	—	16 3·25
	18	23	45	36·7	39 14·69	14·35	− 0·34	—	—	—	—
	19	23	45	50·8	43 25·33	25·23	− 0·10	109 45 14·48	13·90	− 0·58	16 3·56
	20	23	46	6·2	47 37·32	36·94	− 0·38	109 58 37·72	36·10	− 1·62	16 3·12
	22	23	46	38·7	56 3·04	2·80	− 0·24	—	—	—	—
	23	23	46	56·2	16 0 17·18	16·92	− 0·26	—	—	—	15 57·96
	24	23	47	14·6	4 32·19	31·81	− 0·38	110 48 21·87	22·20	+ 0·33	16 1·33
	29	23	48	50·8	25 57·41	57·20	− 0·21	111 41 50·31	48·30	− 2·01	16 2·76

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, *(Continued)*

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1848.	*d.*	*h.*	*m.*	*s.*	*h. m. s.*	*s.*	*s.*	° ′ ″	″	″	′ ″
Dec.	3	23	50	30·5	16 43 17·61	17·24	— 0·37	112 17 4·26	6·50	+ 2·24	16 3·10
	4	23	50	55·5	47 39·23	38·67	— 0·56	—	—	—	16 3·00
	6	23	51	46·5	56 23·45	23·10	— 0·35	112 39 3·44	3·10	— 0·34	16 3·20
	7	23	52	12·8	17 0 46·33	46·05	— 0·28	112 45 26·15	28·80	+ 2·65	15 59·38
	8	23	52	39·4	5 9·61	9·44	— 0·17	112 51 30·06	27·70	— 2·36	16 4·54
	12	23	54	30·	—	—	—	113 10 52·71	50·40	— 2·31	—
	13	23	54	59·	—	—	—	113 14 32·75	32·30	— 0·45	16 3·18
	14	23	55	28·5	31 38·52	37·95	— 0·57	113 17 45·30	46·30	+ 1·00	16 2·70
	15	23	55	57·4	36 4·13	3·79	— 0·34	113 20 30·57	32·20	+ 1·63	—
	16	23	56	26·7	40 30·04	29·86	— 0·18	—	—	—	16 0·24
	17	23	56	56·6	44 56·58	56·14	— 0·44	113 24 43·02	40·00	— 3·02	16 2·60
	18	23	57	26·2	49 22·81	22·57	— 0·24	113 25 58·27	61·80	+ 3·53	16 0·40
	19	23	57	56·5	53 49·73	49·14	— 0·59	113 26 55·24	55·20	— 0·04	16 3·43
	20	23	58	26·3	58 16·18	15·81	— 0·37	113 27 18·38	20·30	+ 1·92	16 3·20
	21	23	58	56·4	18 2 42·92	42·53	— 0·39	113 27 17·82	17·10	— 0·72	16 3·05
	22	23	59	26·5	7 9·70	9·27	— 0·43	113 26 43·02	45·60	+ 2·58	16 0·64
	24	0	0	9·7	11 36·12	36·00	— 0·12	—	—	—	16 2·16
	27	0	1	26·2	24 55·94	55·67	— 0·27	—	—	—	16 3·18
	28	0	1	55·8	29 22·17	21·91	— 0·26	—	—	—	16 2·32
	29	0	2	25·6	33 48·57	47·98	— 0·59	—	—	—	16 0·66
1849.											
Jan.	1	0	3	51·8	18 47 4·67	4·53	— 0·14	—	—	—	16 3·25
	2	0	4	20·3	51 29·78	29·39	— 0·39	112 55 42·31	42·70	+ 0·39	16 1·98
	4	0	5	15·5	19 0 18·28	17·95	— 0·33	112 43 57·42	57·30	— 0·12	16 2·98
	8	0	7	0·8	17 50·12	49·63	— 0·49	112 15 2·46	3·50	+ 1·04	16 3·72
	10	0	7	50·2	26 32·75	32·39	— 0·36	111 57 58·02	58·40	+ 0·38	16 3·10
	17	0	10	24·8	56 43·64	43·02	— 0·62	110 44 54·34	55·60	+ 1·26	16 2·54
	19	0	11	2·8	20 5 14·84	14·34	— 0·50	110 20 24·33	25·70	+ 1·37	16 1·75
	22	0	11	54·5	17 56·44	55·86	— 0·58	109 40 47·92	49·40	+ 1·48	15 59·12
	23	0	12	10·2	22 8·67	8·16	— 0·51	109 26 49·46	53·10	+ 3 64	16 2·40
	24	0	12	25·0	26 20·03	19 68	— 0·35	109 12 32·22	35·20	+ 2·98	16 3·45
	25	0	12	39·3	30 30·93	30·40	— 0·53	108 57 53·50	56·20	+ 2·70	16 2·63
	26	0	12	52·5	34 40·78	40·31	— 0·47	108 42 56·94	56·30	— 0·64	16 0·08
	27	0	13	5·0	38 49·84	49·41	— 0·43	108 27 35·76	36·20	+ 0·44	16 0·75
	28	0	13	16·7	42 58·12	57·67	— 0·45	—	—	—	16 0·80
	29	0	13	27·4	47 5·43	5·08	— 0·35	107 55 56·06	56·60	+ 0·54	16 1·96
	30	0	13	37·4	51 11·98	11·66	— 0·32	107 39 36·07	37·80	+ 1·73	16 3·74
	31	0	13	46·7	55 17·85	17·39	— 0·46	107 23 1·11	0·20	— 0·91	16 3·54
Feb.	1	0	13	54·8	20 59 22·53	22·28	— 0·25	107 6 3·58	4·30	+ 0·72	16 4·30
	2	0	14	2·5	21 3 26·85	26·33	— 0·52	106 48 51·68	50·60	— 1·08	16 6·63
	3	0	14	8·4	7 29·31	29·52	+ 0·21	106 31 19·33	19·30	— 0·03	16 1·96
	4	0	14	14·7	11 32·24	31·90	— 0·34	—	—	—	16 3·23
	6	0	14	23·8	19 34·40	34·10	— 0·30	—	—	—	16 1·88
	7	0	14	27·2	23 34·38	34·00	— 0·38	105 18 23·65	26·40	+ 2·75	16 2·07
	8	0	14	29·8	27 33·53	33·08	— 0·45	104 59 32·07	33·40	+ 1·33	16 2·94
	9	0	14	31·1	31 31·45	31·37	— 0·08	104 40 25·63	25·30	— 0·33	15 59·66
	10	0	14	32·6	35 29·45	28·86	— 0·59	104 20 58·15	62·60	+ 4·45	—
	11	0	14	32·8	39 26·22	25·60	— 0·66	—	—	—	—
	12	0	14	32·0	43 21·95	21·55	— 0·40	103 41 33·42	34·30	+ 0·88	15 58·56
	13	0	14	30·9	47 17·45	16·79	— 0·66	103 21 26·51	29·80	+ 3·29	16 2·12
	14	0	14	28·5	51 11·64	11·28	— 0·36	—	—	—	16 2·36
	15	0	14	25·3	55 4·93	5·05	+ 0·12	102 40 36·56	42 00	+ 5·44	16 1·00
	16	0	14	21·9	58 58·08	58·10	+ 0·07	102 19 57·94	59·40	+ 1·46	16 2·58
	17	0	14	18·3	22 2 51·04	50·46	— 0·58	—	—	—	—
	18	0	14	13·4	6 42·69	42·13	— 0·56	—	—	—	16 1·35

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, *(Continued.)*

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1849.	d.	h.	m.	s.	h. m. s.	s.	s.	° ′ ″	″	″	′ ″
Feb.	19	0	14	7·3	22 10 33·07	33·13	+ 0·06	101 16 40.71	42·20	+ 1·49	16 2·98
	20	0	14	1·7	14 24·03	23·45	— 0·58	100 55 12·51	14·80	+ 2·29	16 1·62
	21	0	13	54·6	18 13·43	13·12	— 0·31	——	—	—	15 59·52
	22	0	13	46·5	22 1·93	2·16	+ 0·23	100 11 47·21	49·80	+ 2·59	16 2·58
	23	0	13	38·8	25 50·73	50·55	— 0·18	99 49 54·06	53·20	— 0·86	——
	24	0	13	30·0	29 38·41	38·32	— 0·09	——	—	—	——
	25	0	13	20·4	33 25 35	25·50	+ 0·15	——	—	—	15 58·87
	26	0	13	10·4	37 11·85	12·09	+ 0·24	98 43 10·25	11·50	+ 1·25	16 2·70
	27	0	12	59·7	40 57·69	58·09	+ 0·40	98 20 41·95	41·70	— 0·25	16 0·87
	28	0	12	49·2	44 43·71	43·54	— 0·17	97 58 0·81	4·70	+ 3·89	16 2·85
Mar.	1	0	12	37·6	22 48 28·68	28·42	— 0·26	97 35 18·77	21·00	+ 2·23	16 1·46
	2	0	12	25·5	52 13·11	12·78	— 0·33	97 12 26·45	30·70	+ 4·25	16 2·07
	3	0	12	12·8	55 56·88	56·63	— 0·25	96 49 32·34	34·50	+ 2·16	16 2·10
	4	0	11	59·6	59 40·23	39·99	— 0·24	——	—	—	16 2·14
	5	0	11	46·1	23 3 23·20	22·86	— 0·34	96 8 24·71	25·50	+ 0·79	16 0·37
	6	0	11	31·7	7 5·39	5·31	— 0·08	95 40 12·68	13·50	+ 0·82	16 2·90
	7	0	11	17·4	10 47·60	47·30	— 0·30	——	—	—	16 1·70
	8	0	11	2·4	14 29·06	28·90	— 0·16	94 53 33·56	36·40	+ 2·84	16 3·30
	9	0	10	47·1	18 10·26	10·12	— 0·14	94 30 12·02	11·90	— 0·12	16 2·47
	10	0	10	31·3	21 51·01	50·98	— 0·03	94 6 43·11	44·10	+ 0·99	16 2·12
	11	0	10	15·8	25 32·00	31·49	— 0·51	——	—	—	16 1·28
	12	0	9	58·7	29 11·41	11·72	+ 0·31	93 19 39·00	39·70	+ 0·70	15 59·07
	13	0	9	42·4	32 51·67	51·65	— 0·02	92 56 1·69	3·90	+ 2·21	16 3·63
	14	0	9	25·3	36 31·08	31·32	+ 0·24	92 32 25·50	26·10	+ 0·60	16 4·80
	15	0	9	8·3	40 10·49	10·74	+ 0·25	92 8 42·78	46·60	+ 3·82	16 4·16
	16	0	8	51·	—	—	—	91 45 4·76	5·90	+ 1·14	——
	17	0	8	33·2	47 28·46	28·95	+ 0·49	91 21 21·48	24·40	+ 2·92	15 58·23
	18	0	8	15·6	51 7·37	7·79	+ 0·42	——	—	—	16 0·15
	19	0	7	58·1	54 46·39	46·48	+ 0·09	90 33 55·99	59·90	+ 3·91	16 6·07
	20	0	7	40·1	58 24·83	25·02	+ 0·19	90 10 15·58	17·90	+ 2·32	16 2·65
	21	0	7	21·8	0 2 3·03	3·43	+ 0·40	89 46 35·60	36·60	+ 1·00	16 1·08
	22	0	7	3·5	5 41·24	41·73	+ 0·49	89 22 56·24	56·10	— 0·14	15 59·00
	24	0	6	27·4	12 58·19	58·11	— 0·08	88 35 35·81	39·40	+ 3·59	16 1·48
	25	0	6	8·8	16 36·04	36·22	+ 0·18	——	—	—	16 0·30
	26	0	5	50·4	20 14·12	14·29	+ 0·17	——	—	—	16 2·14
	27	0	5	31·7	23 51·93	52·35	+ 0·42	——	—	—	16 0·28
	28	0	5	13·3	27 30·03	30·39	+ 0·36	——	—	—	16 3·23
	29	0	4	54·8	31 8·01	8·44	+ 0·43	86 38 11·01	10·90	— 0.11	16 1·13
	30	0	4	36·4	34 46·13	46·53	+ 0·40	86 14 50·53	51·50	+ 0.97	16 4·87
	31	0	4	17·9	38 24·17	24·67	+ 0·50	85 51 35·63	36·30	+ 0.67	16 3·78
April	1	0	4	0·4	0 42 3·21	2·88	— 0·33	——	—	—	16 1·35
	2	0	3	41·4	45 40·67	41·18	+ 0·51	85 5 17·05	20·30	+ 3·25	16 3·30
	3	0	3	23·1	49 18·92	19·59	+ 0·67	84 42 21·31	20·10	— 1·21	15 59·20
	4	0	3	5·8	52 58·08	58·12	+ 0·04	——	—	—	16 1·48
	5	0	2	47·5	56 36·26	36·80	+ 0·54	83 56 35·28	37·10	+ 1·82	16 5·56
	6	0	2	30·3	1 0 15·61	15·66	+ 0·05	——	—	—	16 1·86
	7	0	2	13·0	3 54·79	54·71	— 0·08	——	—	—	16 1·75
	9	0	1	38·1	11 12·88	13·48	+ 0·60	82 26 28·84	29·30	+ 0·46	16 2·34
	10	0	1	21·3	14 52·57	53·25	+ 0·68	82 4 15·27	15·60	+ 0·33	16 1·77
	11	0	1	4·8	18 32·61	33·30	+ 0·69	81 42 9·73	9·80	+ 0·07	15 58·43
	12	0	0	49·2	22 13·03	13·63	+ 0·60	81 20 8·61	12·30	+ 3·69	16 2·23
	13	0	0	33·2	25 54·04	54·29	+ 0·25	——	—	—	16 3·27
	14	0	0	17·4	29 34·72	35·31	+ 0·59	80 36 43·20	43·30	+ 0·10	16 0·57
	15	0	0	2·8	33 16·65	16·67	+ 0·02	——	—	—	15 59·05
	15	23	59	48·3	36 58·71	58·40	— 0·31	79 53 48·35	51·20	+ 2·85	15 59·77
	16	23	59	33·6	40 40·46	40·50	+ 0·04	79 32 39·16	39·70	+ 0·54	16 2·10

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, (Continued.)

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1849.	d.	h.	m.	s.	h. m. s.	s.	s.	° ′ ″	″	″	′ ″
April	17	23	59	19·2	1 44 22·60	23·02	+ 0·42	79 11 37·02	38·60	+ 1·58	16 1·70
	18	23	59	6·	—	—	—	78 50 48·66	48·00	— 0·66	15 58·67
	20	23	58	40·0	55 32·91	33·09	+ 0·18	78 9 37·51	39·90	+ 2·39	16 4·47
	22	23	58	15·5	2 3 1·47	2·00	+ 0·53	—	—	—	16 0·88
	23	23	58	4·2	6 46·75	47·14	+ 0·39	77 9 25·12	25·60	+ 0·48	15 57·77
	24	23	57	53·8	10 32·82	32·73	— 0·09	76 49 44·76	45·50	+ 0·74	16 7·70
	25	23	57	43·4	14 19·01	18·81	— 0·20	76 30 16·92	18·50	+ 1·58	16 3·80
	27	23	57	23·1	21 51·66	52·41	+ 0·75	75 52 1·86	4·80	+ 2·94	16 4·50
	28	23	57	14·9	25 40·09	39·96	— 0·13	—	—	—	16 1·26
	29	23	57	6·0	29 27·68	28·00	+ 0·32	75 14 44·68	47·10	+ 2·42	16 5·14
	30	23	56	58·4	33 16·56	16·57	+ 0·01	74 56 28·47	29·90	+ 1·43	16 2·56
May	1	23	56	50·9	2 37 5·66	5·65	— 0·01	74 38 23·93	27·60	+ 3·67	16 3·56
	2	23	56	43·9	40 55·21	55·26	+ 0·05	74 20 36·52	40·70	+ 4·18	16 3·80
	3	23	56	37·8	44 45·55	45·39	— 0·16	—	—	—	16 3·38
	4	23	56	31·6	48 35·93	36·09	+ 0·16	73 45 51·35	53·80	+ 2·45	16 3·38
	5	23	56	26·2	52 27·07	27·34	+ 0·27	—	—	—	16 3·25
	6	23	56	21·7	56 19·17	19·15	— 0·02	73 12 8·41	11·50	+ 3·09	16 3·05
	7	23	56	17·7	3 0 11·67	11·53	— 0·14	72 55 43·92	45·30	+ 1·38	16 1·75
	8	23	56	14·2	4 4·70	4·49	— 0·21	72 39 35·68	36·10	+ 0·42	16 3·27
	10	23	56	8·1	11 51·76	52·17	+ 0·41	72 8 8·62	9·90	+ 1·28	16 3·32
	12	23	56	5·2	19 41·95	42·20	+ 0·25	—	—	—	16 0·13
	13	23	56	4·2	23 37·49	38·12	+ 0·63	—	—	—	16 0·90
	14	23	56	4·7	27 34·53	34·62	+ 0·09	71 8 51·86	54·30	+ 2·44	16 2·96
	15	23	56	5·3	31 31·64	31·71	+ 0·07	70 54 52·36	52·10	— 0·26	16 4·83
	16	23	56	6·3	35 29·20	29·41	+ 0·21	70 41 7·22	9·20	+ 1·98	16 2·80
	17	23	56	8·2	39 27·68	27·68	0·00	70 27 42·74	45·90	+ 3·16	16 2·82
	18	23	56	10·7	43 26·79	26·51	— 0·28	70 14 39·12	42·30	+ 3·18	16 3·85
	20	23	56	16·4	51 25·54	25·89	+ 0·35	69 49 34·36	35·80	+ 1·44	16 5·34
	22	23	56	24·9	59 27·25	27·44	+ 0·19	69 25 50·77	51·60	+ 0·83	16 4·76
	24	23	56	35·2	4 7 30·70	31·06	+ 0·36	69 3 31·16	31·80	+ 0·64	16 2·80
	25	23	56	41·3	11 33·34	33·62	+ 0·28	68 52 54·67	54 20	— 0·47	16 2·83
	26	23	56	48·1	15 36·71	36·65	— 0·06	—	—	—	16 4·78
	27	23	56	54·5	19 39·66	40·13	+ 0·47	68 32 42·63	44·70	+ 2·07	16 0·50
	28	23	57	2·0	23 43·80	44·06	+ 0·26	—	—	—	15 58·03
	31	23	57	27·	—	—	—	67 56 53·85	54·60	+ 0·75	16 2·94
June	1	23	57	36·	—	—	—	67 48 52·87	54·20	+ 1·33	16 2·03
	3	23	57	54·7	4 48 15·95	16·21	+ 0·26	67 34 3·39	3·30	— 0·09	16 2·92
	4	23	58	4·8	52 22·61	22·86	+ 0·25	—	—	—	15 59·88
	6	23	58	25·8	5 0 36·82	37·17	+ 0·35	67 14 42·76	43·70	+ 0·94	16 5·25
	7	23	58	37·2	4 44·76	44·78	+ 0·02	67 9 2·06	4·80	+ 2·74	16 1·30
	10	23	59	12·	—	—	—	66 54 31·58	32·80	+ 1·22	16 1·30
	12	23	59	36·0	25 26·49	26·80	+ 0·31	66 46 52·14	53·10	+ 0·96	16 3·92
	18	0	0	40·	—	—	—	66 34 54·86	53·60	— 1·26	16 3·85
	19	0	0	53·	—	—	—	66 33 45·26	43·90	— 1·36	16 1·82
	21	0	1	19·0	58 42·30	42·53	+ 0·23	66 32 41·92	38·60	— 3·32	16 3·03
	24	0	1	58·0	6 11 11·08	11·36	+ 0·28	—	—	—	16 3·12
	27	0	2	36·3	23 39·14	39·24	+ 0·10	66 39 17·69	17·80	+ 0·11	16 3·52
	29	0	3	1·1	31 57·09	56·98	— 0·11	66 44 44·35	48·30	+ 3·95	15 59·58
July	5	0	4	8·8	6 56 44·28	44·20	— 0·08	67 11 4·42	3·70	— 0·72	16 1·70
	6	0	4	18·9	7 0 50·95	50·99	+ 0·04	67 16 48·94	50·30	+ 1·36	16 4·78
	7	0	4	28·8	4 57·49	57·45	— 0·04	67 22 56·22	60·60	+ 4·38	16 2·74
	10	0	4	55·7	17 14·18	14·60	+ 0·42	67 43 51·53	52·00	+ 0·47	16 4·47
	11	0	5	4·5	21 19·49	19·52	+ 0·03	67 51 31·92	35·50	+ 3·58	16 1·94
	12	0	5	12·3	25 23·90	24·03	+ 0·13	67 59 42·14	41·80	— 0·34	16 3·70

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, *(Continued.)*

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1849.	d.	h.	m.	s.	h. m. s.	s.	s.	° ′ ″	″	″	′ ″
July	13	0	5	19·8	7 29 27·97	28·10	+ 0·13	68 8 9·04	10·70	+ 1·66	16 0·64
	14	0	5	26·6	33 31·30	31·71	+ 0·41	68 17 2·23	2·30	+ 0·07	16 3·07
	15	0	5	32·8	37 34·11	34·86	+ 0·75	—	—	—	15 59·73
	16	0	5	39·4	41 37·25	37·55	+ 0·30	68 35 50·98	52·00	+ 1·02	16 3·78
	17	0	5	45·1	45 39·61	39·73	+ 0·12	—	—	—	16 2·50
	19	0	5	54·4	53 42·01	42·56	+ 0·55	69 6 49·40	49·70	+ 0·30	16 3·16
	20	0	5	58·3	57 42·43	43·17	+ 0·74	69 17 51·40	51·60	+ 0·20	16 5·03
	21	0	6	2·3	8 1 43·07	43·23	+ 0·16	69 29 15·15	14·50	— 0·65	16 1·80
Aug.	4	0	5	49·	—	—	—	72 42 44·56	44·20	— 0·36	16 4·67
	7	0	5	30·4	9 8 12·50	12·13	— 0·37	—	—	—	16 1·04
	8	0	5	22·3	12 1·37	1·34	— 0·03	73 48 41·47	41·20	— 0·27	16 1·70
	9	0	5	14·8	15 49·93	49·98	+ 0·05	74 5 48·70	50·40	+ 1·70	—
	11	0	4	57·3	23 25·54	25·59	+ 0·05	74 40 54·17	54·70	+ 0·53	—
	12	0	4	47·4	27 12·12	12·58	+ 0·46	—	—	—	16 3·78
	14	0	4	27·5	34 45·30	44·93	— 0·37	75 35 21·13	21·20	+ 0·07	16 1·88
	15	0	4	16·1	38 30·40	30·31	— 0·09	75 53 56·81	58·10	+ 1·29	16 2·48
	16	0	4	4·5	42 15·30	15·18	— 0·12	76 12 49·91	48·60	— 1·31	16 3·58
	20	0	3	12·6	57 9·54	9·60	+ 0·06	77 30 19·54	19·10	— 0·44	16 2·27
	21	0	2	58·3	10 0 51·77	51·98	+ 0·21	77 50 11·82	12·40	+ 0·58	16 3·56
	22	0	2	43·7	4 33·69	33·89	+ 0·20	78 10 16·90	17·20	+ 0·30	16 0·86
	23	0	2	29·1	8 15·56	15·32	— 0·24	78 30 30·15	33·10	+ 2·95	16 0·70
	24	0	2	12·9	11 55·83	56·32	+ 0·49	78 50 58·32	59·90	+ 1·58	16 2·50
	27	0	1	24·	—	—	—	79 53 19·36	22·50	+ 3·14	16 1·15
	30	0	0	31·2	33 53·24	53·48	+ 0·24	—	—	—	16 0·88
	31	0	0	12·7	37 31·19	31·69	+ 0·50	81 18 41·49	45·20	+ 3·71	16 1·62
Sep.	3	23	58	57·3	10 52 1·78	1·52	— 0·26	82 46 17·40	21·20	+ 3·80	16 2·58
	4	23	58	37·4	55 38·43	38·33	— 0·10	—	—	—	16 4·87
	5	23	58	17·	—	—	—	83 30 52·01	52·90	+ 0·89	16 1·04
	12	23	55	53·5	24 26·47	26·65	+ 0·18	—	—	—	16 4·96
	13	23	55	32·9	28 2·36	2·21	— 0·15	—	—	—	—
	16	23	54	30·	—	—	—	87 42 18·50	21·50	+ 3·00	16 1·55
	17	23	54	9·2	11 42 24·68	24·18	— 0·50	88 5 35·88	36·90	+ 1·02	16 4·30
	19	23	53	27·1	49 35·54	35·19	— 0·35	88 52 13·94	14·70	+ 0·76	16 2·14
	20	23	53	6·0	53 10·96	10·76	— 0·20	89 15 35·99	36·40	+ 0·41	16 1·24
	21	23	52	45·4	56 46·79	46·42	— 0·37	89 38 57·26	59·60	+ 2·34	16 1·46
	23	23	52	3·8	12 3 58·17	58·01	— 0·16	90 25 46·70	48·50	+ 1·80	16 0·90
	25	23	51	22·4	11 9·81	10·10	+ 0·29	91 12 38·27	38·90	+ 0·63	16 5·12
	26	23	51	2·2	14 46·12	46·38	+ 0·26	—	—	—	—
	27	23	50	42·6	18 22·98	22·85	— 0·13	91 59 26·58	27·60	+ 1·02	16 1·92
	28	23	50	22·6	21 59·53	59·53	0·00	92 22 48·64	50·50	+ 1·86	16 4·25
Oct.	1	23	49	25·0	12 32 51·40	51·13	— 0·27	93 32 49·34	49·80	+ 0·46	—
	2	23	49	6·0	36 28·88	28·91	+ 0·03	93 56 3·39	5·30	+ 1·91	16 0·64
	7	23	47	38·1	54 43·51	43·33	— 0·18	95 51 32·59	34·60	+ 2·01	16 2·27
	9	23	47	6·0	13 2 4·42	4·07	— 0·35	96 37 15·17	17·40	+ 2·23	16 2·12
	10	23	46	50·6	5 45·55	45·16	— 0·39	97 0 0·14	1·20	+ 1·06	16 2·27
	11	23	46	35·7	9 27·14	26·76	— 0·38	97 22 37·40	39·50	+ 2·10	16 1·02
	13	23	46	20·8	13 8·74	8·87	+ 0·13	—	—	—	15 59·07
	14	23	46	6·9	16 51·39	51·51	+ 0·12	—	—	—	16 3·34
	15	23	45	53·6	20 34·58	34·72	+ 0·14	98 29 57·33	56·80	— 0·53	15 58·32
	17	23	45	17·6	31 48·20	47·78	— 0·42	99 36 11·35	9·80	— 1·55	16 2·63
	18	23	45	6·5	35 33·60	33·32	— 0·28	99 57 56·05	58·00	+ 1·95	16 2·43
	21	23	44	37·3	46 53·99	53·71	— 0·28	101 2 29·71	28·00	— 1·71	16 3·90
	22	23	44	28·9	50 42·15	41·83	— 0·32	101 23 36·72	38·60	+ 1·88	16 3·98
	23	23	44	21·3	54 31·01	30·60	— 0·41	101 44 35·95	38·80	+ 2·85	—

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, (*Continued.*)

Mean Solar Time of Observation. d.	h.	m.	s.	A. R. from Observation. h. m. s.	A. R. from N. A. s.	Error of N. A. s.	N. P. D. from Observation. ° ′ ″	N. P. D. from N. A. ″	Error of N. A. ″	Mean Hor. Semid. ′ ″
25	23	44	8·1	14 2 10·90	10·20	— 0·70	102 26 5·83	6·30	+ 0·47	—
28	23	43	52·2	13 45·65	45·04	— 0·61	103 26 47·99	49·60	+ 1·61	16 1·96
29	23	43	49·3	17 38·22	38·16	— 0·06	103 46 40·83	38·90	— 1·93	16 0·86
30	23	43	46·8	21 32·25	32·04	— 0·21	104 6 12·36	15·10	+ 2·74	16 0·37
31	23	43	44·9	25 26·94	26·73	— 0·21	104 25 36·97	37·60	+ 0·63	16 1·33
1	23	43	43·9	14 29 22·48	22·21	— 0·27	104 44 43·40	46·30	+ 2·90	16 3·16
2	23	43	43·6	33 18·81	18·52	— 0·29	105 3 39·53	40·60	+ 1·07	—
8	23	43	59·9	57 14·47	14·04	— 0·43	106 51 43·16	42·90	— 0·26	16 2·67
9	23	44	5·8	15 1 16·87	16·30	— 0·57	107 8 47·58	45·70	— 1·88	16 3·96
11	23	44	19·6	9 23·84	23·43	— 0·41	107 41 58·10	58·30	+ 0·20	16 2·58
12	23	44	27·7	13 28·53	28·29	— 0·24	107 58 6·75	7·30	+ 0·55	16 3·45
13	23	44	36·9	17 34·29	34·02	— 0·27	108 13 58·81	57·50	— 1·31	16 2·43
14	23	44	46·9	21 40·92	40·59	— 0·33	108 29 28·98	28·40	— 0·58	16 1·13
18	23	45	34·8	38 15·74	15·26	— 0·48	109 28 10·02	12·70	+ 2·68	16 1·08
19	23	45	49·4	42 26·34	25·97	— 0·37	109 42 2·98	1·70	— 1·28	16 2·60
20	23	46	4·3	46 37·85	37·48	— 0·37	109 55 28·54	29·20	+ 0·66	16 1·42
21	23	46	19·9	50 50·02	49·79	— 0·23	110 8 34·05	34·90	+ 0·85	16 2·43
23	23	46	53·6	59 16·93	16·68	— 0·25	110 33 39·10	39·00	— 0·10	16 0 64
25	23	47	30·7	16 7 47·23	46·58	— 0·65	110 57 10·94	11·20	+ 0·26	16 2·65
27	23	48	9·9	16 19·64	19·37	— 0·27	111 19 8·80	8·90	+ 0·10	16 0·95
28	23	48	30·7	20 37·09	36·82	— 0·27	111 29 30·32	31·50	+ 1·18	16 4·23
29	23	48	52·3	24 55·31	54·95	— 0·36	111 39 32·40	29·60	— 2·80	16 1·86
30	23	49	14·3	29 13·92	13·74	— 0·18	111 49 0·24	2·80	+ 2·56	16 2·85
2	23	50	0·7	16 37 53·60	53·28	— 0·32	112 6 53·48	53·60	+ 0·12	—
3	23	50	24·8	42 14·23	13·97	— 0·26	—	—	—	16 1·98
4	23	50	49·5	46 35·56	35·25	— 0·31	112 23 1·33	1·90	+ 0·57	16 0·73
7	23	52	6·7	59 42·66	42·41	— 0·25	—	—	—	—
9	23	53	1·1	17 8 30·34	29·69	— 0·65	112 55 41·61	41·70	+ 0·09	16 2·63
10	23	53	28·4	12 54·25	53·99	— 0·26	113 0 58·41	52·90	— 5·51	15 59·54
11	23	53	56·3	17 18·74	18·67	— 0·07	113 5 34·80	36·70	+ 1·90	16 1·55
12	23	54	24·8	21 43·93	43·73	— 0·20	—	—	—	15 59·80
13	23	54	53·5	26 9·28	9·12	— 0·16	113 13 41·96	41·70	— 0·26	—
14	23	55	22·5	30 34·90	34·77	— 0·13	113 17 2·21	2·50	+ 0·29	16 2·90
18	23	57	21·0	48 19·94	19·57	— 0·37	113 25 44·50	45·80	+ 1·30	16 1·98
19	23	57	50·8	52 46·36	46·12	— 0·24	113 26 46·48	46·20	— 0·28	16 3·14
20	23	58	20·	—	—	—	113 27 18·93	18·20	— 0·73	—
21	23	58	50·6	18 1 39·44	39·38	— 0·06	—	—	—	—
26	0	0	50·3	19 25·68	25·53	— 0·15	—	—	—	16 0·68
27	0	1	20·1	23 52·12	51·82	— 0·30	—	—	—	16 1·84
1	0	3	45·0	18 46 0·24	0·11	— 0·13	—	—	—	16 4·07
2	0	4	13·4	50 25·27	24·96	— 0·31	112 57 1·56	1·50	— 0·06	—
3	0	4	41·3	54 49·84	49·48	— 0·36	112 51 30·37	28·90	— 1·47	16 3·65
4	0	5	9·0	59 14·10	13·62	— 0·48	—	—	—	16 3·45
5	0	5	35·9	19 3 37·70	37·37	— 0·33	112 39 2·78	2·10	— 0·68	16 2·67
9	0	7	20·3	21 8·52	7·92	— 0·60	—	—	—	—
10	0	7	44·4	25 29·31	29·31	0·00	112 0 9·64	7·70	— 1·94	16 2·43
11	0	8	9·	—	—	—	111 50 59·29	62·50	+ 3·21	—
13	0	8	55·5	38 30·27	30·01	— 0·26	—	—	—	15 58·27
14	0	9	17·4	42 48·82	49·01	+ 0·19	111 21 14·62	14·80	+ 0·18	16 2·78
15	0	9	39·9	47 7·87	7·32	— 0·55	111 10 30·02	29·40	— 0·62	16 2·80
16	0	10	0·9	51 25·54	24·96	— 0·58	110 59 18·79	19·60	+ 0·81	16 2·52
17	0	10	21·0	55 42·23	41·90	— 0·33	110 47 45·07	45·80	+ 0·73	16 1·57
18	0	10	40 6	59 58·47	58·11	— 0·36	110 35 47·08	48·30	+ 1·22	16 2·76

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, (*Continued.*)

Mean Solar Time of Observation					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1850.	*d.*	*h.*	*m.*	*s.*	*h. m. s.*	*s.*	*s.*	° ′ ″	″	″	′ ″
Jan.	19	0	10	59·4	20 4 13·89	13·57	— 0·32	110 23 26·47	27·40	+ 0·93	16 3·43
	21	0	11	34·9	12 42·58	42·20	— 0·38	109 57 35·48	37·00	+ 1·57	16 4·18
	26	0	12	49·7	33 40·34	39·84	— 0·50	108 46 35·48	37·40	+ 1·92	—
	27	0	13	1·9	37 59·14	48 94	— 0·20	—	—	—	16 1·22
	28	0	13	13·7	41 57·52	57·21	— 0·31	108 15 43·32	47·90	+ 4·58	16 1·22
	29	0	13	24·4	46 4·84	4·66	— 0·18	107 59 53·50	53·40	— 0·10	16 3·52
	30	0	13	34·7	50 11·68	11·29	— 0·39	107 43 40·06	39·60	— 0·46	16 3·30
Feb.	1	0	13	52·2	20 58 22·40	22·13	— 0·27	107 10 13·82	15·60	+ 1·78	16 4·78
	2	0	13	59·7	21 2 26·41	26·33	— 0·08	106 53 6·44	6·20	— 0·24	16 4·14
	3	0	14	6·7	6 30·03	29·72	— 0·31	—	—	—	16 1·82
	4	0	14	12·6	10 32·45	32·31	— 0·14	106 17 55·41	54·70	— 0·71	16 3·74
	5	0	14	17·4	14 33·84	34·09	+ 0·25	—	—	—	16 0·15
	6	0	14	22·1	18 35·10	35·08	— 0·02	105 41 36·03	35·50	— 0·53	16 2·18
	7	0	14	25·8	22 35·39	35·27	— 0·12	105 23 1·95	1·50	— 0·45	16 2·98
	8	0	14	28·9	26 35·06	34·69	— 0·37	—	—	—	16 0·08
	12	0	14	32·1	42 24·49	24·49	0·00	103 46 23·86	24·90	+ 1·04	15 57·62
	14	0	14	29·6	50 15·01	14·78	— 0·23	103 6 7·69	8·40	+ 0·71	15 59·93
	15	0	14	26·9	54 8·92	8·79	— 0·13	102 45 39·98	40·90	+ 0·92	16 0·66
	16	0	14	23·5	58 2·07	2·06	— 0·01	102 24 58·50	61·20	+ 2·70	16 2·25
	17	0	14	19·8	22 1 54·77	54·51	— 0·26	—	—	—	16 0·95
	18	0	14	14·7	5 46·33	46·37	+ 0·04	101 43 6·25	6·70	+ 0·45	16 1·82
	19	0	14	9·5	9 37·68	37·46	— 0·22	101 21 51·82	52·70	+ 0·88	16 0·53
	20	0	14	3·3	13 27·96	27·84	— 0·12	101 0 29·09	28·30	— 0·79	15 59·00
	21	0	13	56·7	17 17·91	17·55	— 0·36	100 38 52·22	53·60	+ 1·38	15 59·03
	22	0	13	48·8	21 6·56	6·58	+ 0·02	100 17 11·97	9·30	— 2·67	16 4·98
	23	0	13	41·0	24 55·28	54·97	— 0·31	99 55 11·01	15·60	+ 4·59	15 58·50
	24	0	13	32·2	28 42·99	42·72	— 0·27	—	—	—	16 2·90
	25	0	13	22·3	32 29·64	29·86	+ 0·22	99 11 8·40	1·60	— 6·80	16 3·23
	26	0	13	12·8	36 16·70	16·40	— 0·30	98 48 40·64	42·30	+ 1·66	16 1·08
	27	0	13	2·4	40 2·84	2·37	— 0·47	98 26 13·80	15·00	+ 1·20	16 1·44
	28	0	12	50·9	43 47·85	47·81	— 0·04	98 3 36·05	40·50	+ 4·45	15 59·16
Mar.	1	0	12	39·4	22 47 32·88	32·72	— 0·16	97 40 56·18	58·90	+ 2·72	16 2·34
	2	0	12	27·5	51 17·50	17·12	— 0·38	97 18 9·75	10·70	+ 0·95	16 2·43
	3	0	12	14·4	55 0·86	1·04	+ 0·18	—	—	—	16 6·45
	4	0	12	1·	—	—	—	96 32 13·76	15·90	+ 2·14	—
	5	0	11	48·1	23 2 27·65	27·49	— 0·16	96 9 9·60	10·00	+ 0·40	15 59·88
	6	0	11	34·4	6 10·47	10·07	— 0·40	95 45 56·24	59·00	+ 2·76	16 1·73
	7	0	11	19·8	9 52·38	52·24	— 0·14	95 22 41·74	43·40	+ 1·66	15 59·43
	8	0	11	5·1	13 34·17	34·05	— 0·12	—	—	—	16 2·74
	9	0	10	50·3	17 15·85	15·47	— 0·38	94 35 59·72	59·20	— 0·52	16 2·52
	10	0	10	34·3	20 56·44	56·57	+ 0·13	—	—	—	16 5·07
	11	0	10	18·7	24 37·29	37·31	+ 0·02	93 49 1·82	0·70	— 1·12	16 2·38
	12	0	10	2·6	28 17·73	17·76	+ 0·03	93 25 23·29	27·10	+ 3·81	16 3·67
	13	0	9	46·4	31 58·00	57·90	— 0·10	93 1 48·87	51·10	+ 2·23	16 0·57
	14	0	9	29·7	35 37·83	37·76	— 0·07	92 38 9·33	13·00	+ 3·67	16 2·36
	15	0	9	12·6	39 17·25	17·35	+ 0·10	92 14 33·20	33·40	+ 0·20	16 3·20
	16	0	8	55·5	42 56·59	56·69	+ 0·10	91 50 48·82	52·40	+ 3·58	16 3·56
	18	0	8	20·6	50 14·76	14·71	— 0·05	—	—	—	16 5·87
	19	0	8	2·5	53 53·16	53·41	+ 0·25	90 39 39·86	46·10	+ 6·24	16 3·32
	20	0	7	44·7	57 31·84	31·94	+ 0·10	90 16 2·23	4·10	+ 1·87	16 3·05
	21	0	7	27·1	0 1 10·70	10·30	— 0·40	89 52 20·89	22·80	+ 1·91	16 0·04
	22	0	7	8·3	4 48·43	48·54	+ 0·11	89 28 39·10	42·40	+ 3·30	16 0·86
	23	0	6	50·0	8 26·64	26·66	+ 0·02	89 4 58·95	63·40	+ 4·45	16 0·44
	24	0	6	31·8	12 4·94	4·67	— 0·27	—	—	—	16 0·08
	25	0	6	13·4	15 43·05	42·62	— 0·43	88 17 48·62	51·00	+ 2·38	16 1·17

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, *(Continued)*

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1849.	d.	h.	m.	s.	h. m. s.	s.	s.	° ′ ″	″	″	′ ″
Oct.	25	23	44	8·1	14 2 10·90	10·20	— 0·70	102 26 5·83	6·30	+ 0·47	—
	28	23	43	52·2	13 45·65	45·04	— 0·61	103 26 47·99	49·60	+ 1·61	16 1·96
	29	23	43	49·3	17 38·22	38·16	— 0·06	103 46 40·83	38·90	— 1·93	16 0·86
	30	23	43	46·8	21 32·25	32·04	— 0·21	104 6 12·36	15·10	+ 2·74	16 0·37
	31	23	43	44·9	25 26·94	26·73	— 0·21	104 25 36·97	37·60	+ 0·63	16 1·33
Nov.	1	23	43	43·9	14 29 22·48	22·21	— 0·27	104 44 43·40	46·30	+ 2·90	16 3·16
	2	23	43	43·6	33 18·81	18·52	— 0·29	105 3 39·53	40·60	+ 1·07	—
	8	23	43	59·9	57 14·47	14·04	— 0·43	106 51 43·16	42·90	— 0·26	16 2·67
	9	23	44	5·8	15 1 16·87	16·30	— 0·57	107 8 47·58	45·70	— 1·88	16 3·96
	11	23	44	19·6	9 23·84	23·43	— 0·41	107 41 58·10	58·30	+ 0·20	16 2·58
	12	23	44	27·7	13 28·53	28·29	— 0·24	107 58 6·75	7·30	+ 0·55	16 3·45
	13	23	44	36·9	17 34·29	34·02	— 0·27	108 13 58·81	57·50	— 1·31	16 2·43
	14	23	44	46·9	21 40·92	40·59	— 0·33	108 29 28·98	28·40	— 0·58	16 1·13
	18	23	45	34·8	38 15·74	15·26	— 0·48	109 28 10·02	12·70	+ 2·68	16 1·08
	19	23	45	49·4	42 26·34	25·97	— 0·37	109 42 2·98	1·70	— 1·28	16 2·60
	20	23	46	4·3	46 37·85	37·48	— 0·37	109 55 28·54	29·20	+ 0·66	16 1·42
	21	23	46	19·9	50 50·02	49·79	— 0·23	110 8 34·05	34·90	+ 0·85	16 2·43
	23	23	46	53·6	59 16·93	16·68	— 0·25	110 33 39·10	39·00	— 0·10	16 0·64
	25	23	47	30·7	16 7 47·23	46·58	— 0·65	110 57 10·94	11·20	+ 0·26	16 2·65
	27	23	48	9·9	16 19·64	19·37	— 0·27	111 19 8·80	8·90	+ 0·10	16 0·95
	28	23	48	30·7	20 37·09	36·82	— 0·27	111 29 30·32	31·50	+ 1·18	16 4·23
	29	23	48	52·3	24 55·31	54·95	— 0·36	111 39 32·40	29·60	— 2·80	16 1·86
	30	23	49	14·3	29 13·92	13·74	— 0·18	111 49 0·24	2·80	+ 2·56	16 2·85
Dec.	2	23	50	0·7	16 37 53·60	53·28	— 0·32	112 6 53·48	53·60	+ 0·12	—
	3	23	50	24·8	42 14·23	13·97	— 0·26	—	—	—	16 1·98
	4	23	50	49·5	46 35·56	35·25	— 0·31	112 23 1·33	1·90	+ 0·57	16 0·73
	7	23	52	6·7	59 42·66	42·41	— 0·25	—	—	—	—
	9	23	53	1·1	17 8 30·34	29·69	— 0·65	112 55 41·61	41·70	+ 0·09	16 2·63
	10	23	53	28·4	12 54·25	53·99	— 0·26	113 0 58·41	52·90	— 5·51	15 59·54
	11	23	53	56·3	17 18·74	18·67	— 0·07	113 5 34·80	36·70	+ 1·90	16 1·55
	12	23	54	24·8	21 43·93	43·73	— 0·20	—	—	—	15 59·80
	13	23	54	53·5	26 9·28	9·12	— 0·16	113 13 41·96	41·70	— 0·26	—
	14	23	55	22·5	30 34·90	34·77	— 0·13	113 17 2·21	2·50	+ 0·29	16 2·90
	18	23	57	21·0	48 19·94	19·57	— 0·37	113 25 44·50	45·80	+ 1·30	16 1·98
	19	23	57	50·8	52 46·36	46·12	— 0·24	113 26 46·48	46·20	— 0·28	16 3·14
	20	23	58	20·	—	—	—	113 27 18·93	18·20	— 0·73	—
	21	23	58	50·6	18 1 39·44	39·38	— 0·06	—	—	—	—
	26	0	0	50·3	19 25·68	25·53	— 0·15	—	—	—	16 0·68
	27	0	1	20·1	23 52·12	51·82	— 0·30	—	—	—	16 1·84
1850.											
Jan.	1	0	3	45·0	18 46 0·24	0·11	— 0·13	—	—	—	16 4·07
	2	0	4	13·4	50 25·27	24·96	— 0·31	112 57 1·56	1·50	— 0·06	—
	3	0	4	41·3	54 49·84	49·48	— 0·36	112 51 30·37	28·90	— 1·47	16 3·65
	4	0	5	9·0	59 14·10	13·62	— 0·48	—	—	—	16 3·45
	5	0	5	35·9	19 3 37·70	37·37	— 0·33	112 39 2·78	2·10	— 0·68	16 2·67
	9	0	7	20·3	21 8·52	7·92	— 0·60	—	—	—	—
	10	0	7	44·4	25 29·31	29·31	0·00	112 0 9·64	7·70	— 1·94	16 2·43
	11	0	8	9·	—	—	—	111 50 59·29	62·50	+ 3·21	—
	13	0	8	55·5	38 30·27	30·01	— 0·26	—	—	—	15 58·27
	14	0	9	17·4	42 48·82	49·01	+ 0·19	111 21 14·62	14·80	+ 0·18	16 2·78
	15	0	9	39·9	47 7·87	7·32	— 0·55	111 10 30·02	29·40	— 0·62	16 2·80
	16	0	10	0·9	51 25·54	24·96	— 0·58	110 59 18·79	19·60	+ 0·81	16 2·52
	17	0	10	21·0	55 42·23	41·90	— 0·33	110 47 45·07	45·80	+ 0·73	16 1·57
	18	0	10	40 6	59 58·47	58·11	— 0·36.	110 35 47·08	48·30	+ 1·22	16 2·76

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, (Continued.)

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1850.	d.	h.	m.	s.	h. m. s.	s.	s.	° ′ ″	″	″	′ ″
Jan.	19	0	10	59·4	20 4 13·89	13·57	— 0·32	110 23 26·47	27·40	+ 0·93	16 3·43
	21	0	11	34·9	12 42·58	42·20	— 0·38	109 57 35·43	37·00	+ 1·57	16 4·18
	26	0	12	49·7	33 40·34	39·84	— 0·50	108 46 35·48	37·40	+ 1·92	——
	27	0	13	1·9	37 59·14	48·94	— 0·20	——	—	—	16 1·22
	28	0	13	13·7	41 57·52	57·21	— 0·31	108 15 43·32	47·90	+ 4·58	16 1·22
	29	0	13	24·4	46 4·84	4·66	— 0·18	107 59 53·50	53·40	— 0·10	16 3·52
	30	0	13	34·7	50 11·68	11·29	— 0·39	107 43 40·06	39·60	— 0·46	16 3·30
Feb.	1	0	13	52·2	20 58 22·40	22·13	— 0·27	107 10 13·82	15·60	+ 1·78	16 4·78
	2	0	13	59·7	21 2 26·41	26·33	— 0·08	106 53 6·44	6·20	— 0·24	16 4·14
	3	0	14	6·7	6 30·03	29·72	— 0·31	——	—	—	16 1·82
	4	0	14	12·6	10 32·45	32·31	— 0·14	106 17 55·41	54·70	— 0·71	16 3·74
	5	0	14	17·4	14 33·84	34·09	+ 0·25	——	—	—	16 0·15
	6	0	14	22·1	18 35·10	35·08	— 0·02	105 41 36·03	35·50	— 0·53	16 2·18
	7	0	14	25·8	22 35·39	35·27	— 0·12	105 23 1·95	1·50	— 0·45	16 2·98
	8	0	14	28·9	26 35·06	34·69	— 0·37	——	—	—	16 0·08
	12	0	14	32·1	42 24·49	24·49	0·00	103 46 23·86	24·90	+ 1·04	15 57·62
	14	0	14	29·6	50 15·01	14·78	— 0·23	103 6 7·69	8·40	+ 0·71	15 59·93
	15	0	14	26·9	54 8·92	8·79	— 0·13	102 45 39·98	40·90	+ 0·92	16 0·66
	16	0	14	23·5	58 2·07	2·06	— 0·01	102 24 58·50	61·20	+ 2·70	16 2·25
	17	0	14	19·8	22 1 54·77	54·51	— 0·26	——	—	—	16 0·95
	18	0	14	14·7	5 46·33	46·37	+ 0·04	101 43 6·25	6·70	+ 0·45	16 1·82
	19	0	14	9·5	9 37·68	37·46	— 0·22	101 21 51·82	52·70	+ 0·88	16 0·53
	20	0	14	3·3	13 27·96	27·84	— 0·12	101 0 29·09	28·30	— 0·79	15 59·00
	21	0	13	56·7	17 17·91	17·55	— 0·36	100 38 52·22	53·60	+ 1·38	15 59·03
	22	0	13	48·8	21 6·56	6·58	+ 0·02	100 17 11·97	9·30	— 2·67	16 4·98
	23	0	13	41·0	24 55·28	54·97	— 0·31	99 55 11·01	15·60	+ 4·59	15 58·50
	24	0	13	32·2	28 42·99	42·72	— 0·27	——	—	—	16 2·90
	25	0	13	22·3	32 29·64	29·86	+ 0·22	99 11 8·40	1·60	— 6·80	16 3·23
	26	0	13	12·8	36 16·70	16·40	— 0·30	98 48 40·64	42·30	+ 1·66	16 1·08
	27	0	13	2·4	40 2·84	2·37	— 0·47	98 26 13·80	15·00	+ 1·20	16 1·44
	28	0	12	50·9	43 47·85	47·81	— 0·04	98 3 36·05	40·50	+ 4·45	15 59·16
Mar.	1	0	12	39·4	22 47 32·88	32·72	— 0·16	97 40 56·18	58·90	+ 2·72	16 2·34
	2	0	12	27·5	51 17·50	17·12	— 0·38	97 18 9·75	10·70	+ 0·95	16 2·43
	3	0	12	14·4	55 0·86	1·04	+ 0·18	——	—	—	16 6·45
	4	0	12	1·	——	—	—	96 32 13·76	15·90	+ 2·14	——
	5	0	11	48·1	23 2 27·65	27·49	— 0·16	96 9 9·60	10·00	+ 0·40	15 59·88
	6	0	11	34·4	6 10·47	10·07	— 0·40	95 45 56·24	59·00	+ 2·76	16 1·73
	7	0	11	19·8	9 52·38	52·24	— 0·14	95 22 41·74	43·40	+ 1·66	15 59·43
	8	0	11	5·1	13 34·17	34·05	— 0·12	——	—	—	16 2·74
	9	0	10	50·3	17 15·85	15·47	— 0·38	94 35 59·72	59·20	— 0·52	16 2·52
	10	0	10	34·3	20 56·44	56·57	+ 0·13	——	—	—	16 5·07
	11	0	10	18·7	24 37·29	37·31	+ 0·02	93 49 1·82	0·70	— 1·12	16 2·38
	12	0	10	2·6	28 17·73	17·76	+ 0·03	93 25 23·29	27·10	+ 3·81	16 3·67
	13	0	9	46·4	31 58·00	57·90	— 0·10	93 1 48·87	51·10	+ 2·23	16 0·57
	14	0	9	29·7	35 37·83	37·76	— 0·07	92 38 9·33	13·00	+ 3·67	16 2·36
	15	0	9	12·6	39 17·25	17·35	+ 0·10	92 14 33·20	33·40	+ 0·20	16 3·20
	16	0	8	55·5	42 56·59	56·69	+ 0·10	91 50 48·82	52·40	+ 3·58	16 3·56
	18	0	8	20·6	50 14·76	14·71	— 0·05	——	—	—	16 5·87
	19	0	8	2·5	53 53·16	53·41	+ 0·25	90 39 39·86	46·10	+ 6·24	16 3·32
	20	0	7	44·7	57 31·84	31·94	+ 0·10	90 16 2·23	4·10	+ 1·87	16 3·05
	21	0	7	27·1	0 1 10·70	10·30	— 0·40	89 52 20·89	22·80	+ 1·91	16 0·04
	22	0	7	8·3	4 48·43	48·54	+ 0·11	89 28 39·10	42·40	+ 3·30	16 0·86
	23	0	6	50·0	8 26·64	26·66	+ 0·02	89 4 58·95	63·40	+ 4·45	16 0·44
	24	0	6	31·8	12 4·94	4·67	— 0·27	——	—	—	16 0·08
	25	0	6	13·4	15 43·05	42·62	— 0·43	88 17 48·62	51·00	+ 2·38	16 1·17

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, (*Continued.*)

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1850.	*d.*	*h.*	*m.*	*s.*	*h. m. s.*	*s.*	*s.*	° ′ ″	″	″	′ ″
Mar.	26	0	5	54·6	0 19 20·80	20·55	— 0·25	87 54 16·44	18·30	+ 1·86	16 2·10
	27	0	5	36·1	22 58·70	58·43	— 0·27	87 30 43·24	48·30	+ 5·06	16 1·94
	28	0	5	16·9	26 36·06	36·32	+ 0·26	——	—	—	16 1·80
April	2	0	3	45·	——	—	—	85 11 1·14	4·80	+ 3·66	16 0·08
	3	0	3	26·6	0 48 24·76	24·97	+ 0·21	84 48 2·27	3·40	+ 1·13	15 58·78
	4	0	3	8·9	52 3·56	3·50	— 0·06	84 25 7·43	7·40	— 0·03	16 0·53
	5	0	2	51·1	55 42·31	42·22	— 0·09	84 2 11·50	17·00	+ 5·50	16 1·66
	6	0	2	33·7	59 21·41	21·15	— 0·26	——	—	—	16 1·08
	8	0	1	59·3	1 6 40·00	39·62	— 0·38	82 54 21·04	24·10	+ 3·06	16 0·75
	9	0	1	42·3	10 19·54	19·22	— 0·32	82 32 0·83	0·20	— 0·63	16 4·03
	10	0	1	25·1	13 58·85	59·08	+ 0·23	82 9 44·22	43·80	— 0·42	15 58·87
	11	0	1	9·0	17 39·24	39·21	— 0·03	81 47 33·56	35·30	+ 1·74	16 2·07
	13	0	0	37·1	25 0·34	0·34	0·00	81 3 44·19	43·00	— 1·19	16 1·17
	15	0	0	6·8	32 23·02	22·74	— 0·28	80 20 25·12	26·20	+ 1.08	16 1·35
	15	23	59	51·6	36 4·34	4·43	+ 0·09	79 59 1·24	2·10	+ 0·86	16 6·18
	16	23	59	37·1	39 46·38	46·46	+ 0·08	79 37 46·05	48·00	+ 1·95	16 0·66
	17	23	59	23·2	43 28·97	28·88	— 0·09	79 16 43·44	44·10	+ 0·66	16 1·88
	18	23	59	9·9	47 11·96	11·65	— 0·31	78 55 48·91	50·90	+ 1·99	16 1·60
	19	23	58	56·1	50 54·88	54·82	— 0·06	78 35 6·40	8·70	+ 2·30	15 59·34
	21	23	58	30·6	58 22·50	22·37	— 0·13	77 54 17·30	18·60	+ 1·30	16 1·44
	22	23	58	18·6	2 2 7·01	6·79	— 0·22	77 34 9·34	11·30	+ 1·96	16 0·15
	23	23	58	6·4	5 51·28	51·66	+ 0·38	77 14 14·84	16·30	+ 1·46	16 1·26
	24	23	57	55·7	9 37·16	36·98	— 0·18	76 54 30·56	33·80	+ 3·24	15 59·66
	25	23	57	44·4	13 22·35	22·78	+ 0·43	76 35 2·37	4·30	+ 1·93	16 1·53
	26	23	57	34·4	17 8·84	9·08	+ 0·24	——	—	—	16 3·45
	27	23	57	24·6	20 55·65	55·88	+ 0·23	——	—	—	16 0·88
	28	23	57	15·3	24 42.85	43·20	+ 0·35	——	—	—	16 0·06
	29	23	57	6·6	28 30.65	31·05	+ 0·40	——	—	—	16 4·34
	30	23	56	59·2	32 19·80	19·43	— 0·37	75 0 58·82	60·90	+ 2·08	16 3·07
May	1	23	56	51·5	2 36 8·68	8·38	— 0·30	74 42 54·75	55·20	+ 0·45	16 1·37
	2	23	56	44·5	39 58·19	57·89	— 0·30	74 25 1·12	4·50	+ 3·38	16 1·53
	3	23	56	37·9	43 48·09	47·97	— 0·12	74 7 28·61	29·20	+ 0·59	16 1·66
	4	23	56	32·4	47 39·14	38·63	— 0·51	——	—	—	16 3·98
	5	23	56	26·9	51 30·16	29·87	— 0·29	73 33 4·02	5·70	+ 1·68	16 2·80
	6	23	56	21·8	55 21·66	21·68	+ 0·02	73 16 17·01	18·20	+ 1·19	16 2·20
	7	23	56	18·0	59 14·38	14·08	— 0·30	72 59 45·40	47·30	+ 1·90	16 2·80
	8	23	56	14·4	3 3 7·29	7·08	— 0·21	72 43 30 85	33·30	+ 2·45	16 0·75
	9	23	56	11·2	7 0·63	0·65	+ 0·02	72 27 35·46	36·40	+ 0·94	15 2·47
	10	23	56	9·0	10 55·06	54·81	— 0·25	72 11 55·28	57·10	+ 1·82	15 59·64
	11	23	56	7·4	14 49·99	49·54	— 0·45	——	—	—	15 59·64
	12	23	56	6·2	18 45·28	44·84	— 0·44	71 41 30·07	32·20	+ 2·13	16 2·20
	13	23	56	5·2	22 40·86	40·72	— 0·14	71 26 45·85	47·20	+ 1·35	16 2·65
	14	23	56	4·6	26 36·83	37·17	+ 0·34	71 12 21·22	21·00	— 0·22	15 59·90
	15	23	56	5·7	30 34·53	34·18	— 0·35	70 58 13·03	13·70	+ 0·67	16 1·48
	16	23	56	6·6	34 32·00	31·75	— 0·25	70 44 24·88	25·90	+ 1·02	16 0·75
	17	23	56	7·9	38 29·78	29·83	+ 0·05	70 30 54·49	57·60	+ 3·11	16 2·32
	19	23	56	12·6	46 27·66	27·65	— 0·01	70 5 0·16	0·80	+ 0·64	16 1·64
	20	23	56	15·7	50 27·31	27·35	+ 0·04	69 52 31·43	32·90	+ 1·47	16 3·23
	21	23	56	19·7	54 27·82	27·58	— 0·24	69 40 26 58	25·60	— 0·98	16 1·40
	22	23	56	24·0	58 28·71	28·33	— 0·38	69 28 38·65	39·20	+ 0·55	16 1·50
	26	23	56	45·0	4 14 35·99	36·40	+ 0·41	68 45 4·50	6·80	+ 2·30	16 1·40
	27	23	56	52·2	18 39·74	39·66	— 0·08	68 35 9·11	8·00	— 1·11	16 2·38
	28	23	56	59·3	22 43·48	43·38	— 0·10	68 25 29·90	31·50	+ 1·60	16 1·33
	31	23	57	23·6	34 57·49	57·31	— 0·18	——	—	—	16 0·40

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, *(Continued.)*

Mean Solar Time of Observation.					A. R from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1850.	d.	h.	m.	s.	h. m. s.	s.	s.	° ′ ″	″	″	′ ″
June	1	23	57	32·3	4 39 2·70	2·84	+ 0·14	——	—	—	16 0·17
	2	23	57	41·8	43 8·85	8·78	— 0·07	——	—	—	16 0·95
	3	23	57	51·6	47 15·21	15·13	— 0·08	67 35 48·40	48·20	— 0·20	16 1·75
	4	23	58	1·5	51 21·71	21·84	+ 0·13	——	—	—	16 1·20
	5	23	58	11·9	55 28·73	28·92	+ 0·19	67 22 18·43	19·30	+ 0·87	16 0·55
	6	23	58	22·9	59 36·35	36·35	0·00	——	—	—	16 2·20
	7	23	58	34·0	5 3 43·96	44·07	+ 0·11	67 10 23·75	25·30	+ 1·55	16 0·93
	9	23	58	57·	——	—	—	67 0 8·90	7·20	— 1·70	16 0·33
	10	23	59	9·3	16 9·05	8·88	— 0·17	66 55 34·85	34·50	— 0·35	16 2·14
	11	23	59	21·3	20 17·60	17·63	+ 0·03	66 51 25·82	26·20	+ 0·38	16 0·95
	12	23	59	33·5	24 26·44	26·55	+ 0·11	66 47 41·69	42·20	+ 0·51	16 1·66
	13	23	59	45·8	28 35·32	35·63	+ 0·31	66 44 22·01	22·70	+ 0·69	16 1·86
	17	0	0	24·	——	—	—	66 36 51·43	52·40	+ 0·97	16 2·58
	18	0	0	37·	——	—	—	66 35 14·27	11·80	— 2·47	16 1·98
	19	0	0	50·3	49 22·75	22·57	— 0·18	——	—	—	——
	20	0	1	2·7	53 31·80	32·10	+ 0·30	66 33 3·82	5·00	+ 1·18	16 2·25
	21	0	1	15·9	57 41·51	41·62	+ 0·11	66 32 38·96	38·80	— 0·16	16 2·74
	22	0	1	28·7	6 1 50·89	51·12	+ 0·23	66 32 39·59	37·40	— 2·19	16 1·33
	25	0	2	7·	——	—	—	66 35 1·94	2·30	+ 0·36	——
	26	0	2	20·	——	—	—	66 36 39·90	40·10	+ 0·20	16 2·94
	27	0	2	32·	——	—	—	66 38 41·94	42·50	+ 0·56	16 1·00
	28	0	2	45·	——	—	—	66 41 11·41	9·40	— 2·01	16 0·37
	29	0	2	56·4	30 54·85	55·23	+ 0·38	66 44 2·73	1·10	— 1·63	16 2·67
	30	0	3	8·5	35 3·49	3·81	+ 0·32	——	—	—	16 2·80
July	1	0	3	20·6	6 39 12·16	12·19	+ 0·03	66 50 60·10	57·70	— 2·40	16 2·00
	2	0	3	32·2	43 20·31	20·35	+ 0·04	66 55 2·91	2·50	— 0·41	16 2·36
	3	0	3	43·5	47 28·20	28·26	+ 0·06	66 59 32·46	31·50	— 0·96	16 3·18
	4	0	3	54·5	51 35·81	35·91	+ 0·10	67 4 24·23	24·60	+ 0·37	16 0·84
	5	0	4	5·1	55 43·00	43·29	+ 0·29	67 9 41·13	41·60	+ 0·47	16 2·58
	6	0	4	15·8	59 50·25	50·33	+ 0·08	67 15 22·93	22·50	— 0·43	16 3·96
	8	0	4	35·7	7 8 3·37	3·42	+ 0·05	67 27 54·92	55·20	+ 0·28	16 1·73
	9	0	4	44·8	12 9·06	9·40	+ 0·34	67 34 46·26	46·80	+ 0·54	16 2·50
	11	0	5	2·7	20 20·06	20·16	+ 0·10	67 49 40·57	39·40	— 1·17	16 1·62
	13	0	5	18·6	28 29·21	29·13	— 0·08	——	—	—	16 0·97
	18	0	5	49·1	48 42·55	42·90	+ 0·35	68 53 33·94	34·40	+ 0·46	16 1·84
	19	0	5	54·0	52 44·00	44·04	+ 0·04	69 4 10·51	9·80	— 0·71	16 2·87
	23	0	6	6·2	8 8 42·43	42·95	+ 0·52	69 49 57·89	60·60	+ 2·71	16 1·96
	25	0	6	9·4	16 38·74	38·97	+ 0·23	70 14 59·26	58·40	— 0·86	16 0·48
	28	0	6	9·3	28 28·32	28·60	+ 0·28	——	—	—	16 0·53
	29	0	6	8·9	32 24·45	23·97	— 0·48	71 8 49·04	48·50	— 0·54	——
	30	0	6	6·8	36 18·97	18·76	— 0·21	71 23 0·90	3·40	+ 2·50	15 58·85
	31	0	6	4·4	40 13·06	12·97	— 0·09	71 37 36·84	36·70	— 0·14	16 0·08
Aug.	2	0	5	57·6	8 47 59·35	59·63	+ 0·28	72 7 37·54	37·40	— 0·14	15 59·70
	3	0	5	53·4	51 51·69	52·07	+ 0·38	72 23 4·40	4·20	— 0·20	16 0·50
	5	0	5	43·8	59 35·18	35·21	+ 0·03	72 54 53·33	49·40	— 3·93	16 0·02
	6	0	5	38·1	9 3 26·06	25·90	— 0·16	73 11 10·44	7·10	— 3·34	16 0·80
	7	0	5	31·8	7 16·25	16·01	— 0·24	73 27 41·24	41·10	— 0·14	16 2·80
	8	0	5	24·6	11 5·65	5·52	— 0·13	73 44 30·27	31·20	+ 0·93	16 0·84
	9	0	5	17·2	14 54·75	54·44	— 0·31	74 1 37·87	37·00	— 0·87	16 1·84
	12	0	4	50·4	26 17·56	17·71	+ 0·15	74 54 22·73	25·70	+ 2·97	15 59·20
	13	0	4	40·5	30 4·18	4·31	+ 0·13	75 12 31·90	31·20	— 0·70	16 1·46
	14	0	4	30·0	33 50·18	50·33	+ 0·15	——	—	—	15 59·58
	20	0	3	15·5	56 14·78	15·05	+ 0·27	——	—	—	15 59·43
	21	0	3	1·0	59 56·80	57·37	+ 0·57	77 45 18·28	17·40	— 0·88	16 3·12
	22	0	2	46·9	10 3 39·24	39·23	— 0·01	78 5 17·43	18·80	+ 1·37	15 58·50

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, *(Continued)*

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N P. D. from N. A	Error of N. A	Mean Hor. Semid
1850.	d.	h.	m.	s.	h. m. s.	s.	s.	° ′ ″	″	″	′ ″
Aug.	23	0	2	31·6	10 7 20·43	20·62	+ 0·19	78 25 32·70	31·40	— 1·30	15 58·47
	24	0	2	16·0	11 1·34	1·58	+ 0·24	78 45 52·49	55·00	+ 2·51	16 2·23
	26	0	1	43·8	18 22·17	22·26	+ 0·09	79 27 14·53	14·00	— 0·53	16 0·15
	27	0	1	27·1	22 2·00	2·01	+ 0·01	79 48 7·11	8·90	+ 1·79	15 59·36
	28	0	1	9·6	25 41·04	41·40	+ 0·36	80 9 14·55	13·50	— 1·05	16 2·45
	29	0	0	52·8	29 20·69	20·44	— 0·25	——	—	—	——
	30	0	0	35·0	32 59·41	59·14	— 0·27	80 51 54·54	50·90	— 3·64	16 0·02
	31	0	0	16·3	36 37·22	37·51	+ 0·29	——	—	—	——
Sep.	1	23	59	39·5	10 43 53·44	53·40	— 0·04	81 56 53·93	52·50	— 1·43	15 58·56
	9	23	57	1·2	11 12 47·10	47·22	+ 0·12	84 55 39·43	39·20	— 0·23	15 59·32
	10	23	56	40·8	16 23·20	23·09	— 0·11	——	—	—	15 57·70
	11	23	56	19·9	19 58·83	58·83	0·00	85 41 18·63	19·20	+ 0·57	16 0·57
	15	23	54	56·	——	—	—	87 13 31·49	29·90	— 1·59	16 1·70
	19	23	53	31·	——	—	—	88 46 33·09	30·60	— 2·49	16 1·77
	22	23	52	28·7	59 29·10	28·63	— 0·47	89 56 42·03	36·50	— 5·53	16 3·20
	24	23	51	47·5	12 6 40·79	40·22	— 0·57	90 43 25·69	25·10	— 0·59	16 0·20
	25	23	51	26·8	10 16·60	16·27	— 0·33	91 6 49·11	50·00	+ 0·89	16 3·12
	26	23	51	6·4	13 52·78	52·52	— 0·26	91 30 12·75	14·70	+ 1·95	16 0·28
	27	23	50	45·9	17 28·73	28·97	+ 0·24	91 53 41·05	39·00	— 2·05	16 1·44
	28	23	50	26·4	21 5·68	5·68	0·00	——	—	—	15 57·94
	29	23	50	6·7	24 42·50	42·65	+ 0·15	——	—	—	16 1·75
	30	23	49	47·3	28 19·68	19·90	+ 0·22	93 3 47·14	45·80	— 1·34	16 3·70
Oct.	1	23	49	28·7	12 31 57·56	57·44	— 0·12	93 27 5·85	4·80	— 1·05	16 3·32
	2	23	49	10·3	35 35·63	35·30	— 0·33	93 50 23·64	21·70	— 1·94	16 0·86
	3	23	48	51·9	39 13·74	13·50	— 0·24	94 13 33·26	36·00	+ 2·74	16 0·55
	4	23	48	33·8	42 52·14	52·06	— 0·08	94 36 51·62	47·30	— 4·32	16 0·97
	6	23	47	59·0	50 10·34	10·26	— 0·08	95 22 58·95	59 50	+ 0·55	16 7·45
	9	23	47	9·6	13 1 10·46	10·62	+ 0·16	——	—	—	——
	11	23	46	39·2	8 33·07	33·08	+ 0·01	97 17 12·70	11·30	— 1·40	16 2·18
	14	23	45	56·9	19 40·30	40·41	+ 0·11	98 24 34·21	33·00	— 1·21	16 1·82
	15	23	45	44·0	23 23·96	23·92	— 0·04	98 46 43·45	46·30	+ 2·85	15 59·58
	16	23	45	31·8	27 8·23	7·99	— 0·24	99 8 50 31	52·00	+ 1·69	16 0·97
	17	23	45	19·6	30 52·64	52·63	— 0·01	——	—	—	16 4·36
	18	23	45	8·3	34 37·81	37·87	+ 0·06	——	—	—	16 1·96
	20	23	44	47·9	42 10·42	10·20	— 0·22	100 35 52·89	51·60	— 1·29	16 2·92
	21	23	44	38·4	45 57·51	57·35	— 0·16	100 57 13·41	13·80	+ 0·39	16 1·55
	22	23	44	29·9	49 45·55	45·19	— 0·36	101 18 25·93	26·30	+ 0·37	16 0·13
	24	23	44	14·	——	—	—	102 0 23·81	20·20	— 3·61	16 4·74
	25	23	44	7·8	14 1 13·04	12·93	— 0·11	102 21 1·87	0·80	— 1·07	15 59·73
	28	23	43	52·4	12 47·25	47·38	+ 0·13	103 21 52·68	53·30	+ 0·62	16 4·67
	29	23	43	49·0	16 40·38	40·43	+ 0·05	——	—	—	16 0·20
	30	23	43	46·4	20 34·34	34·27	— 0·07	104 1 28·86	26·20	— 2·66	16 1·90
	31	23	43	44·2	24 28·66	28·92	+ 0·26	104 20 53·72	52·90	— 0·82	16 0·95
Nov.	3	23	43	43·8	14 36 17·91	17·74	— 0·17	105 17 49·41	48·50	— 0·91	16 2·30
	4	23	43	45·1	40 15·76	15·65	— 0·11	105 36 19·52	17·40	— 2·12	16 1·17
	5	23	43	47·1	44 14·36	14·38	+ 0·02	105 54 33·57	30·90	— 2·67	16 3·78
	6	23	43	50·1	48 13·97	13·95	— 0·02	——	—	—	15 59·79
	10	23	44	10·8	15 4 20 88	20 55	— 0·33	107 21 34 69	31·10	— 3·59	16 2·65
	12	23	44	25·4	12 28·68	28·84	+ 0·16	107 54 18·19	16·20	— 1·99	15 59·88
	13	23	44	34·4	16 34·22	34·23	+ 0·01	108 10 10·97	10·60	— 0·37	16 0·75
	14	23	44	44·0	20 40·45	40·45	0·00	108 25 49 31	45·90	— 3·41	16 2·10
	15	23	44	54·0	24 47·13	47·51	+ 0·38	108 41 5·82	1·60	— 4·22	16 1·00
	17	23	45	17·8	33 4·01	4·10	+ 0·09	——	—	—	——
	18	23	45	30·8	37 13·57	13·64	+ 0·07	109 24 46·70	47·60	+ 0·90	——

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, (*Continued.*)

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1850.	d.	h.	m.	s.	h. m. s.	s.	s.	° ′ ″	″	″	′ ″
Nov.	19	23	45	44·7	15 41 24·04	24·01	— 0·03	109 38 44·40	41·40	— 3·00	15 58·67
	20	23	45	59·1	45 35·10	35·20	+ 0·10	109 52 15·24	13·70	— 1·54	——
	21	23	46	14·5	49 47·01	47·20	+ 0·19	——	—	—	16 1·92
	22	23	46	30·9	54 0·04	0·00	— 0·04	110 18 12·17	12·60	+ 0·43	15 58·83
	24	23	47	5·9	16 2 28·21	27·99	— 0·22	110 42 42·62	41·90	— 0·72	16 1·75
	25	23	47	24·3	6 43·31	43·17	— 0·14	——	—	—	——
	29	23	48	46·2	23 51·65	51·32	— 0·33	——	—	—	16 1·94
Dec.	2	23	49	54·6	16 36 49·89	49·70	— 0·19	112 4 51·94	49·10	— 2·84	16 0·62
	3	23	50	18·4	41 10·24	10·41	+ 0·17	——	—	—	15 59·8
	5	23	51	8·9	49 54·01	53·54	— 0·47	112 28 43·38	42·90	— 0·48	15 58·03
	6	23	51	34·4	54 16·17	15·90	— 0·27	112 35 49·27	48·50	— 0·77	——
	8	23	52	27.6	17 3 2·58	2·09	— 0·49	112 48 41·76	39·60	— 2·16	16 0·20
	9	23	52	54·3	7 25·90	25·85	— 0·05	——	—	—	16 1·33
	11	23	53	49·5	16 14·38	14·52	+ 0·14	113 4 33·05	33·20	+ 0·15	16 0·70
	12	23	54	17·7	20 39·21	39·38	+ 0·17	113 8 56·40	56·20	— 0·20	16 1·33
	13	23	54	46·0	25 4·18	4·54	+ 0·36	113 12 50·29	51·50	+ 1·21	16 2·34
	15	23	55	44·1	33 55·57	55·66	+ 0·09	113 19 19·43	18·60	— 0·83	16 3·34
	16	23	56	13·3	38 21·40	21·56	+ 0·16	113 21 49·44	50·10	+ 0·66	16 4·00
	17	23	56	42·9	42 47·59	47·64	+ 0·05	113 23 51·69	53·50	+ 1·81	16 2·98
	18	23	57	12·6	47 13·92	13·89	— 0·03	113 25 32·39	28·80	— 3·59	15 58·87
	19	23	57	42·3	51 40·33	40·27	— 0·06	113 26 37·29	35·80	— 1·49	15 57·38
	20	23	58	11·7	56 6·35	6·75	+ 0·40	113 27 15·06	14·60	— 0·46	16 1·08
	22	23	59	11·6	18 4 59·50	59·84	+ 0·34	113 27 8·11	7·30	— 0·81	16 1·75
	23	23	59	41·6	9 26·21	26·42	+ 0·21	113 26 22·62	21·20	— 1·42	16 1·90
	27	0	1	11·8	22 46·29	45·87	— 0·42	——	—	—	16 2·83
	31	0	3	9·3	40 30·31	29·85	— 0·46	——	—	—	16 0·70
1851. Jan.	1	0	3	38·1	18 44 55·79	55·28	— 0·51	——	—	—	16 2·16
	2	0	4	5·9	49 20·15	20·37	+ 0·22	112 58 24·93	20·00	— 4·93	16 3·85
	3	0	4	34·1	53 44·99	45·13	+ 0·14	112 52 56·09	54·10	— 1·99	16 2·78
	4	0	5	1·8	58 9·39	9·53	+ 0·14	112 47 0·81	0·90	+ 0·09	16 2·83
	6	0	5	56·3	19 6 57·07	57·03	— 0·04	112 33 48·55	53·20	+ 4·65	16 0·17
	7	0	6	22·5	11 19·93	20·08	+ 0·15	112 26 38·64	39·10	+ 0·46	16 4·14
	8	0	6	48·8	15 42·83	42·64	— 0·19	112 18 55·70	58·50	+ 2·80	16 2·12
	9	0	7	13·7	20 4·38	4·66	+ 0·28	112 10 51·83	51·60	— 0·23	——
	10	0	7	39·1	24 26·44	26·13	— 0·31	112 2 20·36	18·60	— 1·76	16 0·70
	11	0	8	2·8	28 46·81	47·00	+ 0·19	——	—	—	16 1·86
	12	0	8	26·7	33 7·28	7.26	— 0·02	——	—	—	16 1·22
	14	0	9	12·2	41 45·99	45·88	— 0·11	111 23 50·37	51·20	+ 0·83	16 2·45
	15	0	9	33·8	46 4·30	4·19	— 0·11	111 13 10·24	11·90	+ 1·66	16 2·76
	16	0	9	54·7	50 21·80	21·83	+ 0·03	111 2 6·69	8·10	+ 1·41	16 1·28
	17	0	10	14·6	54 38·31	38·76	+ 0·45	110 50 40·01	40·40	+ 0·39	16 4·92
	18	0	10	34·9	58 55·22	55·00	— 0·22	110 38 49·23	48·80	— 0·43	16 3·80
	20	0	11	12·2	20 6 25·64	25·28	— 0·36	——	—	—	——
	21	0	11	29·2	11 39·33	39·32	— 0·01	110 0 54·36	54·90	+ 0·54	16 1·40
	22	0	11	45·9	15 52·59	52·62	+ 0·03	109 47 28·86	31·60	+ 2·74	15 59·10
	23	0	12	2·0	20 5·33	5·17	— 0·16	109 33 47·22	46 20	— 1·02	16 0·33
	24	0	12	17·2	24 17·12	16·94	— 0·18	109 19 37·97	39·10	+ 1·13	16 1·33
	25	0	12	31·4	28 27·88	27·93	+ 0·05	109 5 8·89	10·50	+ 1·61	16 2·74
	27	0	12	57·9	36 47·64	47·58	— 0·06	108 35 10·42	11·00	+ 0·58	16 2·23
	28	0	13	9.9	40 56·14	56·21	+ 0·07	108 19 40·06	40·70	+ 0·64	16 2·12
	29	0	13	21·3	45 4·16	4·04	— 0·12	——	—	—	15 56·84
	30	0	13	31·6	49 10·99	11·04	+ 0·05	107 47 39·61	40·90	+ 1·29	16 2·38
	31	0	13	41·4	53 17·41	17·24	— 0·17	107 31 13·38	12·30	— 1·08	16 2·07

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, (*Continued.*)

Mean Solar Time of Observation.					A. R from Observation.	A. R. from N. A.	Error of N. A	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1851.	*d.*	*h.*	*m.*	*s.*	*h. m. s.*	*s.*	*s.*	° ′ ″	″	″	′ ″
Feb.	1	0	13	50·2	20 57 22·79	22·63	— 0·16	—	—	—	—
	3	0	14	5·4	21 5 31·20	30·91	— 0·29	106 39 54·69	56·30	+ 1·61	16 1·82
	4	0	14	11·9	9 34·19	33·80	— 0·39	—	—	—	16 2·35
	5	0	14	17·3	13 36·17	35·85	— 0·32	106 4 18·35	18·20	— 0·15	16 2·92
	6	0	14	21·9	17 37·40	37·08	— 0·32	105 46 2·78	4·10	+ 1·32	16 1·66
	7	0	14	25·8	21 37·81	37·47	— 0·34	105 27 31·75	33·90	+ 2·15	16 2·10
	8	0	14	28·8	25 37·43	37·05	— 0·38	105 8 47·28	47·90	+ 0·62	16 2·74
	9	0	14	30·7	29 35·86	35·80	— 0·06	—	—	—	16 0·06
	10	0	14	32·2	33 33·90	33·73	— 0·17	104 30 34·13	31·00	— 3·13	16 0·80
	11	0	14	33·2	37 31·45	30·86	— 0·59	104 10 54·65	60·60	+ 5·95	16 0·68
	12	0	14	33·0	41 27·79	27·20	— 0·59	103 51 16·68	16·30	— 0·38	—
	13	0	14	31·7	45 23·08	22·75	— 0·33	103 31 20·07	18·40	— 1·67	16 1·82
	14	0	14	30·0	49 17·96	17·54	— 0·42	103 11 5·01	7·20	+ 2·19	16 1·62
	15	0	14	27·7	53 12·16	11·57	— 0·59	102 50 42·20	43·30	+ 1·10	16 0·46
	17	0	14	20·3	22 0 57·86	57·44	— 0·42	102 9 15·19	18·90	+ 3·71	16 2·38
	18	0	14	15·8	4 49·92	49·30	— 0·62	101 48 17·37	19·10	+ 1·73	16 2·70
	19	0	14	10·2	8 40·86	40·49	— 0·37	101 27 4·38	8·10	+ 3·72	16 1·40
	20	0	14	4·1	12 31·30	31·00	— 0·30	101 5 44·55	46·50	+ 1·95	16 1·84
	21	0	13	57·7	16 21·36	20·86	— 0·50	100 44 10·72	14·30	+ 3·58	16 1·53
	22	0	13	50·1	20 10·35	10·09	— 0·26	100 22 31·38	32·20	+ 0·82	16 1·20
	24	0	13	34·0	27 47·26	46·69	— 0·57	99 38 35·61	39·70	+ 4·09	16 0·80
	25	0	13	24·7	31 34·52	34·10	— 0·42	99 16 26·66	30·00	+ 3·34	16 1·33
	26	0	13	15·1	35 21·41	20·94	— 0·47	98 54 11·33	11·90	+ 0·57	16 2·72
	27	0	13	4·8	39 7·67	7·21	— 0·46	98 31 42·75	45·80	+ 3·05	16 2·00
	28	0	12	54·1	42 53·47	52·95	— 0·52	98 9 9·84	12·20	+ 2·36	16 1·73
Mar.	1	0	12	42·5	22 46 38·44	38·16	— 0·28	97 46 26·78	31·50	+ 4·72	16 2·87
	2	0	12	31·2	50 23·61	22·85	— 0·76	—	—	—	16 3·43
	3	0	12	18·6	54 7·58	7·04	— 0·54	97 0 52·28	50·20	— 2·08	15 58·83
	4	0	12	5·2	57 50·68	50·75	+ 0·07	96 37 46·89	50·40	+ 3·51	16 0·88
	5	0	11	52·0	23 1 34·01	33·98	— 0·03	96 14 45·78	45·20	— 0·58	16 0·66
	6	0	11	38·4	5 16·93	16·76	— 0·17	95 51 32·12	34·70	+ 2·58	16 0·80
	7	0	11	24·0	8 59·07	59·11	+ 0·04	95 28 20·85	19·60	— 1·25	16 0·75
	8	0	11	9·5	12 41·00	41·02	+ 0·02	95 5 0·97	0·20	— 0·77	16 1·17
	10	0	10	39·2	20 3·73	3·66	— 0·07	94 18 8·91	10·20	+ 1·29	16 1·15
	11	0	10	23·1	23 44·20	44·42	+ 0·22	93 54 37·20	40·20	+ 3·00	16 0·64
	12	0	10	7·4	27 25·02	24·84	— 0·18	93 31 6·22	7·50	+ 1·28	16 1·80
	13	0	9	50·9	31 4 95	4·95	0·00	93 7 29·38	32·40	+ 3·02	16 4·07
	14	0	9	34·4	34 44·99	44·73	— 0·26	92 43 53·77	55·40	+ 1·63	16 3·03
	15	0	9	17·2	38 24·30	24·26	— 0·04	92 20 15·73	16·70	+ 0·97	16 1·22
	17	0	8	42·5	45 42·63	42·54	— 0·09	91 32 55·21	55·60	+ 0·39	15 58·63
	18	0	8	24·8	49 21·38	21·35	— 0·03	91 9 11·28	14·20	+ 2·92	16 0·24
	19	0	8	7·0	53 0·15	0·01	— 0·14	90 45 30·67	32·50	+ 1·83	15 57·06
	20	0	7	49·0	56 38·64	38·49	— 0·15	90 21 51·10	50·90	— 0·20	16 2·16
	21	0	7	30·7	0 0 16·80	16·85	+ 0·05	89 58 9·73	9·70	— 0·03	16 4·40
	22	0	7	12·4	3 55·01	55·09	+ 0·08	89 34 26·91	29·20	+ 2·29	16 0·64
	23	0	6	54·5	7 33·65	33 26	— 0·39	—	—	—	16 2·05
	24	0	6	35·5	11 11·08	11·35	+ 0·27	88 47 10·58	12·10	+ 1·52	16 0·10
	25	0	6	17·4	14 49·53	49·40	— 0·13	88 23 35·27	36·20	+ 0·93	16 0·53
	26	0	5	58·9	18 27·56	27·43	— 0·13	87 59 59·21	62·30	+ 3·09	16 1·48
	27	0	5	40·1	22 5·25	5·46	+ 0·21	87 36 27·86	30·90	+ 3·04	16 0·04
	28	0	5	21·7	25 43·37	43·51	+ 0·14	87 12 58·42	62·40	+ 3·98	15 59·14
	29	0	5	3·3	29 21·43	21·58	+ 0·15	86 49 32·83	37·30	+ 4·47	16 0·70
	30	0	4	44·7	32 59·35	59·70	+ 0·35	—	—	—	15 57·77
	31	0	4	26·8	36 37·96	37·89	— 0·07	86 2 53·04	57·90	+ 4·86	15 59·12
April	1	0	4	8·1	0 40 15·71	16·16	+ 0·45	85 39 42·12	44·50	+ 2·38	16 2·36
	2	0	3	50·7	43 54·88	54·54	— 0·34	85 16 31·62	35·90	+ 4·28	15 59·75

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, *(Continued.)*

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1851.	*d.*	*h.*	*m.*	*s.*	*h. m. s.*	*s.*	*s.*	° ' "	"	"	' "
April	3	0	3	32·5	0 47 33·12	33·02	— 0·10	84 53 32·78	32·30	— 0·48	16 1·70
	4	0	3	14·7	51 11·89	11·64	— 0·25	84 30 28·33	34·10	+ 5·77	15 59·73
	5	0	2	57·0	54 50·67	50·38	— 0·29	84 7 42·37	41·80	— 0·57	16 0·26
	6	0	2	38·9	58 29·00	29·29	+ 0·29	——	—	—	16 0·14
	7	0	2	22·0	1 2 8·71	8·38	— 0·33	83 22 11·52	15·80	+ 4·28	16 2·50
	8	0	2	4·8	5 47·92	47·66	— 0·26	82 59 41·04	43·00	+ 1·96	16 1·13
	9	0	1	47·8	9 27·47	27·15	— 0·32	——	—	—	16 2·05
	10	0	1	30 6	13 6·79	6·88	+ 0·09	82 14 55·08	59·40	+ 4·32	16 1·82
	11	0	1	14·4	16 47·06	46·85	— 0·21	81 52 46·49	49 30	+ 2·81	——
	12	0	0	58·1	20 27·30	27·08	— 0·22	81 30 45·02	47·30	+ 2·28	16 3·40
	13	0	0	42·1	24 7·86	7·58	— 0·28	——	—	—	16 0·50
	14	0	0	26·6	27 48·83	48·38	— 0·45	80 47 6·25	9·60	+ 3·35	16 0·68
	15	0	0	11·2	31 29·91	29·53	— 0·38	80 25 34·15	34·30	+ 0·15	16 2·63
	15	23	59	56·0	35 11·25	11·01	— 0·24	80 4 4·92	8·50	+ 3·58	16 3·18
	16	23	59	41·4	38 53·18	52·86	— 0·32	79 42 51·46	52·60	+ 1·14	16 2·85
	17	23	59	26·6	42 34·87	35·07	+ 0·20	——	—	—	16 0·70
	20	23	58	46·7	53 44·49	44·21	— 0·28	——	—	—	16 4·54
	21	23	58	33·7	57 28·05	28·13	+ 0·08	77 59 9·09	11·50	+ 2·41	16 2·83
	22	23	58	21·8	2 1 12·64	12·51	— 0·13	77 38 58·20	61·20	+ 3·00	16 3·47
	23	23	58	10·0	4 57·40	57·37	— 0·03	77 19 0·64	2·90	+ 2·26	16 2·65
	24	23	57	59·1	8 43·02	42·71	— 0·31	——	—	—	——
	25	23	57	48·7	12 29·17	28·54	— 0·63	——	—	—	16 1·04
	28	23	57	19·0	23 48·98	49·12	+ 0·14	75 42 22·47	28·40	+ 0·93	16 3·70
May	5	23	56	29·9	2 50 35·67	35·68	+ 0·01	72 37 0·97	2·50	+ 1·53	15 59·45
	6	23	56	24·8	54 27·08	27·36	+ 0·28	——	—	—	16 3·18
	7	23	56	20·1	58 18·96	19·58	+ 0·62	73 8 30·88	36·00	+ 5·12	16 6·05
	8	23	56	16·5	3 2 11·93	12·37	+ 0·44	72 47 14·22	18·10	+ 3·88	16 2·78
	9	23	56	13·1	6 4·99	5·69	+ 0·70	72 31 16·53	17·40	+ 0·87	15 58·72
	11	23	56	8·4	13 53·49	54·06	+ 0·57	72 0 5·62	8·90	+ 3·28	16 2·96
	12	23	56	7·0	17 48·56	49·07	+ 0·51	71 44 58·05	61·80	+ 3·75	15 58·63
	13	23	56	6·5	21 44·63	44·66	+ 0·03	71 30 8·41	13·10	+ 4·69	16 3·74
	14	23	56	5·9	25 40·59	40·82	+ 0·23	——	—	—	16 1·08
	15	23	56	5·7	29 36·96	37·55	+ 0·59	71 1 29·01	31·80	+ 2·79	15 58·67
	16	23	56	6·3	33 34·15	34·85	+ 0·70	70 47 39·54	39·90	+ 0·36	15 59·86
	18	23	56	10·0	41 30·92	31·18	+ 0·26	70 20 52·95	54·70	+ 1·75	15 58·00
	19	23	56	12·1	45 29·57	30·20	+ 0·63	70 8 1·01	1·90	+ 0·89	15 59·18
	20	23	56	15·4	49 29·44	29·79	+ 0·35	69 55 26·66	29·20	+ 2·54	16 1·50
	21	23	56	18·8	53 29·44	29·92	+ 0·48	69 43 15·96	17·10	+ 1·14	15 57·00
	22	23	56	23·4	57 30·33	30·63	+ 0·30	69 31 25·51	25·70	+ 0·19	15 59·80
	26	23	56	44·9	4 13 38·40	38·81	+ 0·41	68 47 31·13	31·40	+ 0·27	16 1·04
	27	23	56	51·7	17 41·78	42·13	+ 0·35	——	—	—	16 0·24
	28	23	56	59·3	21 45·96	45·92	— 0·04	——	—	—	16 2·43
	29	23	57	6·5	25 49·76	50·19	+ 0·43	——	—	—	16 0·10
	30	23	57	14·6	29 54·41	54·89	+ 0·48	——	—	—	16 1·42
	31	23	57	23·4	33 59·74	60·02	+ 0·28	——	—	—	16 0·97
June	1	23	57	32·2	4 38 5·14	5·56	+ 0·42	67 52 40·85	40·30	— 0·55	16 2·03
	2	23	57	41·1	42 10·63	11·49	+ 0·86	67 44 53·32	51·60	— 1·72	15 57·44
	4	23	58	1·5	50 24·22	24·41	+ 0·19	67 30 22·44	24·30	+ 1·86	16 1·75
	5	23	58	12·2	54 31·49	31·38	— 0·11	67 23 44·02	45·90	+ 1·88	15 59·43
	6	23	58	22·5	58 38·39	38·65	+ 0·26	67 17 31·97	31·40	— 0·57	16 1·08
	8	23	58	45·	——	—	—	67 6 11·90	14·20	+ 2·30	15 57·94
	9	23	58	56·	——	—	—	67 1 12·89	11·80	— 1·09	15 58·70
	11	23	59	19·3	5 19 18·14	18·89	+ 0·75	66 52 17·96	19·80	+ 1·84	15 59·40
	12	23	59	32·	——	—	—	66 48 29·19	30·50	+ 1·31	16 1·55
	13	23	59	44·1	27 36·09	36·47	+ 0·38	66 45 5·43	5·60	+ 0·17	16 0·62

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, (*Continued*)

Mean Solar Time of Observation.		A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D from Observation	N. P. D. from N. A.	Error of N. A	Mean Hor. Semid.
1851.	*d. h. m. s.*	*h. m. s.*	*s.*	*s.*	° ′ ″	″	″	′ ″
June	16 0 0 8·5	5 35 53·64	54·66	+ 1·02	66 39 29·64	29·70	+ 0·06	15 58·78
	17 0 0 21·5	40 3·27	3·95	+ 0·68	66 37 19·60	18·60	— 1·00	15 59·94
	18 0 0 34·9	44 13·24	13·34	+ 0·10	66 35 31·74	32·30	+ 0·56	15 58·03
	19 0 0 47·4	48 22·37	22·81	+ 0·44	66 34 10·46	10·80	+ 0·34	16 1·20
	20 0 1 0·4	52 31·97	32·35	+ 0·38	66 33 10·84	14·00	+ 3·16	16 0·97
	23 0 1 39·5	6 5 0·81	1·07	+ 0·26	66 32 53·65	52·30	— 1·35	15 59·23
	24 0 1 51·8	9 9·71	10·61	+ 0·90	66 33 33·29	34·70	+ 1·41	16 3·10
	25 0 2 5·4	13 19·89	20·09	+ 0·20	66 34 45·50	41·70	— 3 80	16 0·68
	26 0 2 17·6	17 28·73	29·48	+ 0·75	66 36 14·09	13·50	— 0·59	15 59·18
	27 0 2 30·5	21 38·19	38·74	+ 0·55	66 38 9·68	10·00	+ 0·32	16 1·94
	29 0 2 56·2	29 57·09	56·86	— 0·23	—	—	—	16 0·66
	30 0 3 7·9	34 5·35	5·63	+ 0·28	66 46 26·87	27·00	+ 0·13	15 58·00
July	1 0 3 19·7	6 38 13·79	14·18	+ 0·39	66 50 0·97	1·70	+ 0·73	16 1·86
	2 0 3 31·9	42 22·51	22 48	— 0·03	66 53 59·52	60·70	+ 1·18	16 1·02
	3 0 3 43·2	46 30·43	30·50	+ 0·07	66 58 21·64	23·90	+ 2·26	16 0·24
	4 0 3 54·1	50 37·89	38·24	+ 0·35	67 3 7·73	11·20	+ 3·47	16 2·67
	5 0 4 4·9	54 45·28	45·64	+ 0·36	67 8 22·49	22·60	+ 0·11	16 0·70
	7 0 4 25·7	7 2 59·29	59·40	+ 0·11	—	—	—	15 57·60
	8 0 4 35·5	7 5·62	5·71	+ 0·09	67 26 19·74	19·30	— 0·44	15 59·66
	11 0 5 1·6	19 21·50	22·20	+ 0·70	—	—	—	15 59·70
	17 0 5 44·	—	—	—	68 40 59·46	55·30	— 4·16	16 1·26
	19 0 5 53·	—	—	—	69 1 34·98	34·20	— 0·78	15 58·60
	22 0 6 3·8	8 3 46·00	46·59	+ 0·59	—	—	—	—
	23 0 6 6·5	7 45·30	45·71	+ 0·41	69 47 8·25	5·40	— 2·85	16 1·46
	24 0 6 8·6	11 43·87	44·26	+ 0·39	69 59 20·87	19·70	— 1·17	16 0·48
	25 0 6 10·0	15 41·84	42·26	+ 0·42	70 11 53·28	54·00	+ 0·72	15 59·00
	26 0 6 11·1	19 39·57	39·68	+ 0·11	70 24 45·66	48·30	+ 2·64	15 58·05
Aug.	4 0 5 52·	—	—	—	72 35 1·55	2·10	+ 0·55	16 2·10
	5 0 5 46·7	8 58 40·63	40·76	+ 0·13	72 50 61·37	59·00	— 2·37	16 1·90
	6 0 5 40·4	9 2 30·86	31·47	+ 0·61	73 7 13·38	12·40	— 0·98	16 2·25
	7 0 5 34·0	6 20·98	21·56	+ 0·58	73 23 40·22	42·30	+ 2·08	16 2·23
	9 0 5 19·9	13 59·96	59·92	— 0·04	73 57 29·27	29·70	+ 0·43	16 1·62
	11 0 5 2·8	21 35·91	35·91	0·00	74 32 19·13	18·80	— 0·33	16 0·95
	12 0 4 53·4	25 23·10	23·04	— 0·06	74 50 2·98	5·80	+ 2·82	16 1·13
	13 0 4 43·5	29 9·72	9·59	— 0·13	75 8 9·33	7·30	— 2·03	15 58·94
	14 0 4 32·7	32 55·40	55·63	+ 0·23	75 26 23·67	23·00	— 0·67	16 1·42
	15 0 4 22·0	36 41·20	41·11	— 0·09	75 44 53 07	52·70	— 0·37	16 2·34
	16 0 4 9·9	40 25·68	26·07	+ 0·39	76 3 35·86	36·10	+ 0·24	16 3·03
	18 0 3 45·8	47 54·56	54·46	— 0·10	76 41 43·89	42·50	— 1·39	—
	19 0 3 32·8	51 38·12	37·93	— 0·19	77 1 5·17	4·90	— 0·27	—
	21 0 3 4·8	59 3·20	3 45	+ 0·25	77 40 24·92	27·00	+ 2·08	16 1·55
	25 0 2 4·5	10 13 48·86	49·14	+ 0·28	—	—	—	—
	26 0 1 48·1	17 29·00	29·53	+ 0·53	—	—	—	16 0·62
	27 0 1 32·0	21 9·43	9·50	+ 0·07	79 43 5·75	6·00	+ 0·25	16 1·06
	28 0 1 15·4	24 49·36	49·08	— 0·28	80 4 10·43	8·90	— 1·53	16 1·90
	31 0 0 21·9	35 45·40	45·63	+ 0·23	—	—	—	16 0·15
Sep.	1 0 0 3·7	10 39 23·65	23·77	+ 0·12	81 29 52·48	52·00	— 0·48	16 3·12
	1 23 59 45·1	43 1·53	1·61	+ 0·03	—	—	—	15 59·86
	2 23 59 26·2	46 39·18	39·13	— 0·05	82 13 31·45	33·70	+ 2·25	16 0·04
	3 23 59 7·1	50 16·59	16·34	— 0·25	82 35 38·12	35·90	— 2·22	16 2·10
	4 23 58 47·4	53 53·32	53·30	— 0·02	82 57 49·83	45·30	— 4·53	16 0·26
	5 23 58 27·6	57 30·03	29·99	— 0·04	83 20 3·04	1·50	— 1·54	16 0·90
	6 23 58 6·8	11 1 5·78	6·46	+ 0·68	—	—	—	16 2·56
	7 23 57 47·6	4 43·01	42·70	— 0·31	84 4 53·24	52·90	— 0·34	16 2·08

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, (Continued.)

Mean Solar Time of Observation					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1851.	d.	h.	m.	s.	h. m. s.	s.	s.	° ′ ″	″	″	′ ″
Sep.	8	23	57	27·2	11 8 19·13	18·78	— 0·35	84 27 28·63	27·60	— 1·03	16 0·60
	9	23	57	6·1	11 54·57	54·66	+ 0·09	84 50 4·48	7·80	+ 3·32	16 2·50
	10	23	56	45·6	15 30·56	30·41	— 0·15	85 12 52·44	53·30	+ 0·86	16 1·15
	11	23	56	24·0	19 5·47	6·03	+ 0·56	85 35 44·08	43·80	— 0·28	16 1·57
	12	23	56	3·9	22 41·83	41·56	— 0·27	85 58 38·12	38·90	+ 0·78	16 1·50
	13	23	55	42·1	26 16·49	17·02	+ 0·53	——	—	—	15 57·92
	14	23	55	21·8	29 52·74	52·41	— 0·33	86 44 39·83	41·50	+ 1·67	16 0·90
	15	23	55	0·6	33 28·00	27·76	— 0·24	87 7 49·21	48·50	— 0·71	16 2·18
	16	23	54	39·2	37 3·10	3·11	+ 0·01	87 30 58·18	59·00	+ 0·82	16 3·27
	17	23	54	18·3	40 38·72	38·48	— 0·24	87 54 11·81	12·40	+ 0·59	16 0·28
	21	23	52	54·6	55 1·00	0·44	— 0·56	——	—	—	
	22	23	52	33·8	58 36·63	36·14	— 0·49	89 50 54·73	53·90	— 0·83	16 3·50
	23	23	52	12·9	12 2 12 23	11·97	— 0·26	90 14 19·04	18·70	— 0·34	16 1·44
	28	23	50	32·0	20 13·86	13·53	— 0·33	92 11 28·40	24·50	— 3·90	16 0·68
	29	23	50	12·4	23 50·79	50·46	— 0·33	92 34 50·64	47·50	— 3·14	——
	30	23	49	53·2	27 28·03	27·61	— 0·42	92 58 11·81	9·00	— 2·81	15 58·34
Oct.	2	23	49	14·4	12 34 42·25	42·75	+ 0·50	——	—	—	15 59·60
	3	23	48	56·1	38 20·44	20·74	+ 0·30	——	—	—	16 2·25
	4	23	48	38·3	41 59·18	59·07	— 0·11	——	—	—	16 4·30
	6	23	48	3·1	49 16·97	16·78	— 0·19	95 17 30·42	24·20	— 6·22	16 0·00
	8	23	47	29·	——	—	—	96 3 20·92	20·30	— 0·62	——
	10	23	46	57·4	13 3 57·34	57·05	— 0·29	96 48 57·52	57·10	— 0·42	16 0·40
	12	23	46	27·3	11 20·20	19·99	— 0·21	97 34 13·27	12·00	— 1·27	16 0·17
	14	23	45	59·5	18 45·45	45·03	— 0·42	98 18 57·85	62·20	+ 4·35	15 59·64
	15	23	45	46·3	22 28·79	28·40	— 0·39	98 41 19·94	17·10	— 2·84	16 0·80
	16	23	45	33·7	26 12·71	12·34	— 0·37	99 3 22·08	24·60	+ 2·52	15 59·14
	17	23	45	21·7	29 57·26	56·89	— 0·37	99 25 26·44	24·50	— 1·94	16 0·95
	19	23	44	59·8	37 28·36	27·87	— 0·49	100 8 61·71	59·80	— 1·91	16 0·06
	22	23	44	31·6	48 49·80	49·29	— 0·51	101 13 17·49	15·60	— 1·89	15 59·38
	23	23	44	23·5	52 38·18	37·79	— 0·39	101 34 22·09	21·10	— 0·99	15 58·96
	24	23	44	16 3	56 27·48	26·99	— 0·49	101 55 14·65	16·20	+ 1·55	16 1·42
	27	23	43	58·3	14 7 59·11	58·93	— 0·18	102 56 58·81	54·60	— 4·21	16 0·55
	28	23	43	53·9	11 51·29	51·04	— 0·25	——	—	—	——
	29	23	43	50·5	15 44·37	43·91	— 0·46	103 56 44·59	43·40	— 1·19	16 0·53
	30	23	43	47·2	19 37·64	37·52	— 0·12	——	—	—	——
Nov.	6	23	43	49·0	14 47 15·37	14·91	— 0·46	——	—	—	——
	7	23	43	51·8	51 14·72	14·94	+ 0·22	106 25 51·14	52·00	+ 0·86	16 2·94
	8	23	43	56·9	55 16·34	15·82	— 0·52	——	—	—	15 58·70
	9	23	44	1·8	59 17·85	17·53	— 0·32	107 0 28·95	30·70	+ 1·75	16 0·55
	10	23	44	8·0	15 3 20·58	20·12	— 0·46	107 17 21·72	24·10	+ 2·38	16 2·74
	11	23	44	14·5	7 23·76	23·64	— 0·12	——	—	—	——
	12	23	44	22·3	11 28·06	27·84	— 0·22	107 50 17·25	17·20	— 0·05	16 1·84
	16	23	45	1·2	27 53·32	53·74	+ 0·42	——	—	—	15 58·18
	17	23	45	13·4	32 2·07	2·37	+ 0·30	——	—	—	——
	18	23	45	26·4	36 11·63	11·83	+ 0·20	109 21 20·49	19·00	— 1·49	15 59·50
	19	23	45	39·9	40 21·80	22·15	+ 0·35	109 35 13·63	18·60	+ 4·97	16 3·72
	20	23	45	54·5	44 32·95	33·31	+ 0·36	——	—	—	16 0·06
	21	23	46	9·7	48 44·78	45·28	+ 0·50	110 2 15·36	13·40	— 1·96	16 1·46
	22	23	46	26·0	52 57·64	58·06	+ 0·42	——	—	—	——
	23	23	46	42·8	57 11·08	11·62	+ 0·54	110 27 39·53	40·30	+ 0·77	16 1·86
	24	23	47	0·7	16 1 25·57	25·96	+ 0·39	110 39 51·11	49·80	— 1·31	16 1·64
	25	23	47	19·2	5 40·71	41·06	+ 0·35	——	—	—	16 0·88
	26	23	47	38·5	9 56·59	56·89	+ 0·30	111 2 59·13	59·10	— 0·03	15 59·54
	27	23	47	58·4	14 13·10	13·44	+ 0·34	111 13 59·65	58·20	— 1·45	16 0·80
	28	23	48	19·1	18 30·46	30·68	+ 0·22	111 24 33·74	33·30	— 0·44	16 2·03
	30	23	49	3·1	27 7·62	7·19	— 0·43	111 44 29·56	29·60	+ 0·04	16 0·44

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, *(Continued.)*

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
	d.	h.	m.	s.	h. m. s.	s.	s.	° ′ ″	″	″	′ ″
1851. Dec.	1	23	49	25·5	16 31 26·71	26·40	— 0·31	111 53 52·09	50·30	— 1·79	16 0·77
	2	23	49	48·8	35 46·62	46·22	— 0·40	——	—	—	16 1·24
	4	23	50	36·9	44 27·91	27·63	— 0·28	112 19 18·94	19·60	+ 0·66	16 0·50
	5	23	51	1·7	48 49·36	49·16	— 0·20	112 26 52·94	57·50	+ 4·56	——
	7	23	51	53·5	57 34·38	33·82	— 0·56	112 40 54·01	54·10	+ 0·09	16 0·68
	8	23	52	19·5	17 1 57·00	56·88	— 0·12	112 47 14·27	12·50	— 1·77	16 1·77
	9	23	52	46·6	6 20·74	20·41	— 0·33	112 53 2·49	4·00	+ 1·51	16 0·55
	10	23	53	14·0	10 44·77	44·38	— 0·39	112 58 28·36	28·20	— 0·16	16 1·20
	11	23	53	41·5	15 8·96	8·75	— 0·21	——	—	—	16 1·57
	14	23	55	6·7	28 24·04	24·02	— 0·02	——	—	—	16 1·90
	16	23	56	5·6	37 16·21	15·70	— 0·51	113 21 16·57	16·40	— 0·17	16 0·35
	17	23	56	35·2	41 42·41	41·90	— 0·51	113 23 26·91	27·00	+ 0·09	16 0·86
	18	23	57	4·9	46 8·83	8·28	— 0·55	113 25 9·90	9·50	— 0·40	15 59·27
	19	23	57	34·7	50 35·22	34·81	— 0·41	113 26 24·89	23·70	— 1·19	16 2·94
	20	23	58	4·6	55 1·73	1·46	— 0·27	——	—	—	15 59·64
	21	23	58	35·0	59 28·78	28·18	— 0·60	113 27 28·59	27·30	— 1·29	16 0·00
	22	23	59	4·9	18 3 55·38	54·93	— 0·45	113 27 16·68	16·60	— 0·08	16 0·97
	23	23	59	35·1	8 22·19	21·68	— 0·51	113 26 35·80	37·60	+ 1·80	16 0·20
	25	0	0	4·8	12 48·57	48·39	— 0·18	——	—	—	16 3·52
	27	0	1	4·8	21 41·85	41·53	— 0·32	——	—	—	——
1852. Jan.	2	0	3	59·1	18 48 15·90	16·07	+ 0·17	112 59 39·71	38·10	— 1·61	16 1·19
	3	0	4	27·7	52 41·18	40·77	— 0·41	112 54 20·81	19·00	— 1·81	16 2·56
	5	0	5	22·	——	—	—	112 42 17·15	18·60	+ 1·45	——
	6	0	5	49·4	19 5 52·70	52·48	— 0·22	112 35 36·80	37·90	+ 1·10	16 2·05
	7	0	6	15·7	10 15·61	15·49	— 0·12	112 28 30·15	30·30	+ 0·15	16 2·27
	8	0	6	41·2	14 37·82	38·03	+ 0·21	112 20 53·15	56·10	+ 2·95	15 58·72
	10	0	7	31·7	23 21·58	21·60	+ 0·02	112 4 28·01	29·10	+ 1·09	16 0·30
	12	0	8	19·7	32 2·83	3·00	+ 0·17	111 46 17·08	18·30	+ 1·22	16 3·65
	13	0	8	48·1	36 22·87	22·81	— 0·06	——	—	—	16 0·55
	15	0	9	27·3	45 0·30	0·63	+ 0·33	111 15 51·50	52·80	+ 1·30	15 59·34
	16	0	9	48·5	49 18·07	18·56	+ 0·49	111 4 54·26	55·00	+ 0·74	15 58·76
	17	0	10	9 4	53 35·61	35·83	— 0·22	110 53 30·69	32·80	+ 2·11	15 59·25
	18	0	10	29·8	57 52·58	52·40	— 0·18	——	—	—	16 3·76
	19	0	10	49·0	20 2 8·44	8·28	+ 0·16	——	—	—	——
	20	0	11	7·3	6 23·32	23·43	+ 0·11	110 17 2·19	4·30	+ 2·11	16 2·70
	21	0	11	25·1	10 37·71	37·85	+ 0·14	110 4 6·96	8·60	+ 1·64	16 1·90
	22	0	11	42·2	14 51·46	51·51	+ 0·05	109 50 49·68	50·40	+ 0·72	16 2·54
	23	0	11	58·5	19 4·35	4·38	+ 0·03	109 37 10·12	10·00	— 0·12	16 2·36
	24	0	12	14·0	23 16·43	16·47	+ 0·04	109 23 7·93	7·70	— 0·23	16 1·80
	26	0	12	42·5	31 38·11	38·21	+ 0·10	108 53 55·43	59·40	+ 3·97	15 59·75
	27	0	12	55·3	35 47·58	47·86	+ 0·28	108 38 51·19	54·20	+ 3·01	16 2·10
	28	0	13	7·6	39 56·42	56·66	+ 0·24	108 23 28·67	28·60	— 0·07	16 1·57
	29	0	13	18·8	44 4·20	4·63	+ 0·43	108 7 40·46	43·20	+ 2·74	16 5·52
	30	0	13	29·7	48 11·65	11·76	+ 0·11	107 51 35·10	38·40	+ 3·30	16 3·36
	31	0	13	39·5	52 18·05	18·04	— 0·01	107 35 15·00	14·50	— 0·50	16 1·33
Feb.	2	0	13	56·8	21 0 28·59	28·09	— 0·50	——	—	—	——
	3	0	14	4·1	4 32·38	31·86	— 0·52	106 44 11·34	12·60	+ 1·26	15 59·88
	4	0	14	10·5	8 35·36	34·79	— 0·57	——	—	—	16 0·86
	5	0	14	16·0	12 37·42	36·88	— 0·54	106 8 41·83	43·60	+ 1·77	16 3·54
	6	0	14	20·9	16 38·90	38·17	— 0·73	105 50 32·33	34·00	+ 1·67	16 2·32
	7	0	14	24·6	20 39·18	38·64	— 0·54	105 32 6·44	8·00	+ 1·56	16 2·38
	9	0	14	30·0	28 37·72	37·22	— 0·50	104 54 26·46	29·00	+ 2·54	16 1·64
	10	0	14	31·1	32 35·41	35·33	— 0·08	104 35 16·29	16·90	+ 0·61	16 0·80
	11	0	14	32·4	36 33·26	32·65	— 0·61	104 15 48·02	50·10	+ 2·08	16 2·14

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, *(Continued.)*

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1852.	*d.*	*h.*	*m.*	*s.*	*h. m. s*	*s.*	*s.*	° ′ ″	″	″	′ ″
Feb.	12	0	14	32·5	21 40 29·84	29·23	— 0·61	103 56 7·13	9·00	+ 1·87	16 2·30
	13	0	14	31·8	44 25·72	25·05	— 0·67	103 36 11·16	14·10	+ 2·94	16 0·57
	14	0	14	30·2	48 20·65	20·14	— 0·51	103 16 5·00	5·90	+ 0·90	16 1·42
	15	0	14	27·8	52 14·85	14·49	— 0·36	——	—	—	16 2·18
	16	0	14	25·1	56 8·67	8·12	— 0·55	102 35 6·81	10·70	+ 3·89	16 2·30
	17	0	14	21·6	22 0 1·50	1·03	— 0·47	102 14 21·58	24·80	+ 3·22	16 2·36
	18	0	14	16·8	3 53·45	53·24	— 0·21	101 53 27·42	27·00	— 0·42	16 3·00
	20	0	14	5·8	11 35·57	35·60	+ 0·03	101 10 56·34	58·00	+ 1·66	16 1·17
	21	0	13	59·7	15 25·94	25·76	— 0·18	100 49 25·16	27·70	+ 2·54	16 2·58
	23	0	13	45·1	23 4·40	4·09	— 0·31	100 5 56·67	57·20	+ 0·53	16 1·92
	24	0	13	36·5	26 52·40	52·30	— 0·10	99 43 56·20	57·90	+ 1·70	——
	25	0	13	27·9	30 40·30	39·89	— 0·41	99 21 48·61	50·00	+ 1·39	16 0·44
	26	0	13	18·5	34 27·43	26·85	— 0·58	98 59 30·69	33·70	+ 3·01	16 1·53
	27	0	13	8·3	38 13·74	13·22	— 0·52	98 37 8·04	9·50	+ 1·46	16 2·00
	28	0	12	57·3	41 59·24	59·01	— 0·23	98 14 34·32	37·80	+ 3·48	16 2·00
Mar.	1	0	12	33·8	22 49 28·83	28·94	+ 0·11	97 29 8·72	13·60	+ 4·88	16 0·26
	2	0	12	21·4	53 12·95	13·11	+ 0·16	97 6 19·02	21·80	+ 2·78	16 1·92
	3	0	12	8·7	56 56·73	56·78	+ 0·05	96 43 20·75	24·00	+ 3·25	16 2·38
	4	0	11	55·2	23 0 39·81	39·97	+ 0·16	96 20 19·63	20·70	+ 1·07	16 1·00
	5	0	11	41·3	4 22·37	22·70	+ 0·33	95 57 11·62	12·40	+ 0·78	15 59·58
	6	0	11	27·4	8 5·01	5·00	— 0·01	95 33 56·13	59·10	+ 2·97	16 3·12
	7	0	11	13·3	11 47·42	46·89	— 0·53	——	—	—	16 0·60
	8	0	10	57·4	15 27·99	28·39	+ 0·40	94 47 18·83	19·70	+ 0·87	16 3·16
	9	0	10	42·3	19 9·48	9·53	+ 0·05	94 23 52·78	54·20	+ 1·42	16 1·66
	10	0	10	26·4	22 50·03	50·33	+ 0·30	94 0 26·40	25·50	— 0·90	16 1·37
	11	0	10	10·8	26 30·99	30·83	— 0·16	93 36 50·24	53·70	+ 3·46	16 4·30
	12	0	9	54·5	30 11·16	11·02	— 0·14	93 13 16·90	19·30	+ 2·40	15 58·87
	13	0	9	37·9	33 51·06	50·93	— 0·13	92 49 41·48	42·60	+ 1·12	16 2·16
	14	0	9	20·4	37 30·06	30·60	+ 0·54	——	—	—	——
	15	0	9	3·9	41 10·07	10·03	— 0·04	92 2 20·95	23·80	+ 2·85	16 1·80
	16	0	8	46·5	44 49·18	49·25	+ 0·07	91 38 43·61	42·40	— 1·21	16 0·80
	17	0	8	29·2	48 28·42	28·27	— 0·15	91 14 57·00	60·30	+ 3·30	16 3·65
	18	0	8	11·3	52 7·05	7·10	+ 0·05	90 51 15·67	17·80	+ 2·13	16 3·58
	20	0	7	35·1	59 23·84	24·32	+ 0·48	90 3 48·77	52·80	+ 4·03	16 2·90
	21	0	7	17·8	0 3 3·03	2·74	— 0·29	——	—	—	16 1·35
	22	0	6	59·0	6 40·67	41·04	+ 0·37	89 16 24·93	30·70	+ 5·77	16 1·88
	23	0	6	41·0	10 19·16	19·24	+ 0·08	88 52 51·39	51·70	+ 0·31	16 2·20
	25	0	6	3·7	17 34·96	35·44	+ 0·48	——	—	—	——
	26	0	5	45·5	21 13·18	13·47	+ 0·29	87 42 4·23	7·20	+ 2·97	16 1·68
	27	0	5	27·0	24 51·25	51·48	+ 0·23	87 18 37·60	37·90	+ 0·30	16 0·46
	28	0	5	9·1	28 29·85	29·48	— 0·37	——	—	—	16 2·03
	29	0	4	50·0	32 7·19	7·50	+ 0·31	86 31 43·58	49·60	+ 6·02	16 3·27
	30	0	4	31·6	35 45·33	45·57	+ 0·24	86 8 32·49	31·50	— 0·99	16 2.40
	31	0	4	13·0	39 23·20	23·67	+ 0·47	85 45 15·58	17·60	+ 2·02	15 58·16
April	1	0	3	54·9	0 43 1·59	1·87	+ 0·28	85 22 8·74	8·50	— 0·24	15 59·73
	2	0	3	36·7	46 39·96	40·16	+ 0·20	84 59 1·58	4·60	+ 3·02	16 0·22
	3	0	3	18·4	50 18·14	18·58	+ 0·44	84 36 4·56	6·00	+ 1·44	16 2·87
	4	0	3	1·1	53 57·31	57·15	— 0·16	——	—	—	16 0·57
	5	0	2	43·3	57 36·09	35·87	— 0·22	83 50 23·29	26·30	+ 3·01	16 0·93
	6	0	2	24·9	1 1 14·14	14·79	+ 0·65	83 27 45·13	45·80	+ 0·67	16 3·94
	7	0	2	7·8	4 53·60	53·93	+ 0·33	83 5 12·56	12·00	— 0·56	16 2·40
	8	0	1	50·6	8 32·84	33·30	+ 0·46	82 42 43·46	45·30	+ 1·84	16 2·96
	9	0	1	34·0	12 12·76	12·92	+ 0·16	——	—	—	16 3·14
	11	0	1	1·8	19 33·64	33·03	— 0·61	——	—	—	16 0·33
	12	0	0	45·6	23 13·93	13·52	— 0·41	——	—	—	16 0·28
	13	0	0	28·8	26 53·62	54·35	+ 0·73	80 52 27·97	27·40	— 0·57	16 2·22

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, (*Continued*.)

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1852.	*d.*	*h.*	*m.*	*s.*	*h. m. s.*	*s.*	*s.*	° ′ ″	″	″	′ ″
April	14	0	0	14·3	1 30 35·61	35·53	— 0·08	80 30 41·44	49·30	+ 7·86	15 58·40
	14	23	59	59·3	34 17·12	17·06	— 0·06	80 9 17·53	20·50	+ 2·97	16 2·85
	15	23	59	44·2	37 58·55	58·96	+ 0·41	79 48 2·48	1·30	— 1·18	16 1·46
	16	23	59	30·4	41 41·23	41·24	+ 0·01	79 26 50·72	52·20	+ 1·48	16 1·26
	18	23	59	3·1	49 6·98	6·99	+ 0·01	78 45 6·07	5·30	— 0·77	16 1·98
	19	23	58	50·1	52 50·47	50·49	+ 0·02	78 24 24·46	28·20	+ 3·74	16 2·43
	20	23	58	37·4	56 34·36	34·42	+ 0·06	78 4 2·19	2·50	+ 0·31	——
	21	23	58	25·3	2 0 18·79	18·77	— 0·02	77 43 44·67	48·60	+ 3·93	16 2·32
	22	23	58	13·4	4 3·38	3·57	+ 0·19	77 23 46·22	46·80	+ 0·58	16 1·44
	23	23	58	2·3	7 48·76	48·81	+ 0·05	77 3 57·34	57·50	+ 0·16	16 2·03
	26	23	57	31·3	19 7·33	7·33	0·00	76 5 49·10	47·60	— 1·50	16 2·40
	27	23	57	21·9	22 54·53	54·48	— 0·05	75 46 50·23	51·30	+ 1·07	15 59·12
	28	23	57	13·0	26 42·15	42·12	— 0·03	75 28 7·11	9·30	+ 2·19	16 1·37
	29	23	57	4·4	30 30·12	30·28	+ 0·16	75 9 40·99	41·60	+ 0·61	16 2·36
	30	23	56	56·6	34 18·76	18·95	+ 0·19	74 51 27·75	28·70	+ 0·95	16 0·97
May	2	23	56	43·0	2 41 58·29	57·89	— 0·40	——	—	—	16 1·90
	5	23	56	26·	——	—	—	73 24 15·03	15·20	+ 0·17	15 59·56
	6	23	56	20·9	57 22·31	22·48	+ 0·17	73 7 39·12	36·80	— 2·32	16 0·24
	7	23	56	17·4	3 1 15·35	15·06	— 0·29	72 51 13·67	15·10	+ 1·43	15 59·23
	8	23	56	14·1	5 8·64	8·24	— 0·40	——	—	—	15 57·75
	9	23	56	10·5	9 1·58	2·01	+ 0·43	72 19 23·54	23·20	— 0·34	16 0·44
	11	23	56	7·	——	—	—	71 48 41·77	41·60	— 0·17	15 57·24
	12	23	56	6·7	20 47·40	46·89	— 0·51	71 33 47·78	48·00	+ 0·22	16 1·66
	13	23	56	6·2	24 43·47	43·04	— 0·43	71 19 11·38	12·80	+ 1·42	16 0·80
	14	23	56	5·5	28 39·31	39·78	+ 0·47	71 4 56·00	56·50	+ 0·50	15 58·50
	17	23	56	10·1	40 33·63	33·48	— 0·15	——	—	—	15 59·90
	18	23	56	12·6	44 32·65	32·51	— 0·14	70 11 5·94	4·50	— 1·44	15 59·64
	19	23	56	14·7	48 31·37	32·10	+ 0·73	69 58 29·23	26·20	— 3·03	15 59·40
	20	23	56	19·3	52 32·47	32·22	— 0·25	69 46 9·50	8·60	— 0·90	16 1·15
	21	23	56	23·3	56 33·04	32·87	— 0·17	69 34 12·69	11·60	— 1·09	16 0·50
	24	23	56	38·6	4 8 38·06	37·87	— 0·19	69 0 26·15	27·60	+ 1·45	——
	25	23	56	44·6	12 40·68	40·51	— 0·17	68 49 52·64	56·00	+ 3·36	16 1·40
	26	23	56	51·0	16 43·66	43·61	— 0·05	68 39 45·51	46·50	+ 0·99	16 0·84
	27	23	56	58·3	20 47·51	47·16	— 0·35	68 29 53·15	59·00	+ 5·85	15 58·67
	28	23	57	5·4	24 51·23	51·17	— 0·06	68 20 32·77	34·00	+ 1·23	16 1·88
	29	23	57	13·3	28 55·66	55·60	— 0·06	——	—	—	16 0·68
	30	23	57	21·1	33 0·07	0·46	+ 0·39	68 2 51·26	51·70	+ 0·44	16 0·42
	31	23	57	30·1	37 5·63	5·73	+ 0.10	67 54 32·45	34·70	+ 2·25	16 3·05
June	1	23	57	39·1	4 41 11·20	11·39	+ 0·19	67 46 41·27	41·00	— 0·27	16 2·20
	2	23	57	38·6	45 17·32	17·43	+ 0·11	——	—	—	16 1·90
	3	23	57	58·4	49 23·73	23·85	+ 0·12	67 32 2·17	3·10	+ 0·93	16 2·05
	4	23	58	8·9	53 30·73	30·60	— 0·13	67 25 24·13	19·50	— 4·63	16 2·76
	5	23	58	18·9	57 37·40	37·72	+ 0·32	——	—	—	16 0·48
	6	23	58	30·1	5 1 45·10	45·16	+ 0·06	67 13 2·39	3·10	+ 0·71	16 2·70
	7	23	58	41·5	5 53·17	52·90	— 0·27	67 7 28·30	30·80	+ 2·50	16 1·46
	8	23	58	52·0	10 0·25	0·93	+ 0·68	67 2 22·14	22·40	+ 0·26	16 3·47
	9	23	59	4 3	14 9·06	9·23	+ 0·17	66 57 37·59	38·30	+ 0·71	15 58·76
	10	23	59	16·3	18 17·71	17·78	+ 0·07	66 53 18·12	18·40	+ 0·28	16 3·12
	12	23	59	40·2	26 34·83	35·56	+ 0·73	——	—	—	16 2·72
	13	23	59	53·2	30 44 33	44·72	+ 0·39	66 42 44·04	45·00	+ 0·96	16 2·27
	15	0	0	5·9	34 53·62	54·03	+ 0·41	66 40 2·67	3·00	+ 0·33	15 59·95
	17	0	0	32·	——	—	—	66 35 52·87	53·00	+ 0·13	16 2·96
	18	0	0	45·	——	—	—	66 34 27·64	25·20	— 2·44	16 2·12
	19	0	0	58·	——	—	—	66 33 22·00	22·20	+ 0·20	16 2·20
	21	0	1	24·	——	—	—	66 32 31·23	30·60	— 0·63	16 1·46

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, (Continued)

Mean Solar Time of Observation.					A. R. from Observation.	A R. from N. A.	Error of N A.	N. P. D from Observation.	N. P D from N A.	Error of N. A.	Mean Hor Semid.
1852.	d.	h.	m.	s.	h. m. s.	s.	s.	° ′ ″	″	″	′ ″
June	25	0	2	15·4	6 16 29·14	29·53	+ 0·39	——	—	—	——
	28	0	2	52·7	28 56·16	56·58	+ 0·42	66 42 34·17	31·00	— 3·17	16 2·38
	29	0	3	4·7	33 4·72	5·22	+ 0·50	66 45 37·97	35 50	— 2·47	16 1·64
July	2	0	3	40·	——	—	—	66 57 12·44	14·70	+ 2·26	16 0·40
	3	0	3	51·	——	—	—	67 1 58·30	56·20	— 2·10	15 59·00
	4	0	4	1·1	6 53 44·15	44·73	+ 0·58	——	—	—	16 3·12
	5	0	4	11·6	57 51·21	51·77	+ 0·56	67 12 35·11	31·10	— 4·01	16 1·92
	6	0	4	22·1	7 1 58·30	58·49	+ 0·19	67 18 26·35	24·20	— 2·15	16 1·50
	7	0	4	32·2	6 4·94	4·86	— 0·08	67 24 40·84	41·00	+ 0·16	16 0·10
	9	0	4	50·9	14 16·83	16·54	— 0·29	67 38 24·08	24·60	+ 0·52	15 59·38
	10	0	4	58·9	18 21·43	21·80	+ 0·37	67 45 48·46	51·30	+ 2·84	16 1·82
	11	0	5	8·0	22 27·04	26·67	— 0·37	——	—	—	16 1·24
	12	0	5	15·1	26 30·76	31·10	+ 0·34	68 1 53·53	53·50	— 0·03	16 0·46
	13	0	5	22·5	30 34·72	35·09	+ 0·37	68 10 27·25	28·60	+ 1·35	16 0·13
	14	0	5	29·3	34 38·11	38·61	+ 0·50	68 19 24·69	26·20	+ 1·51	16 1·00
	15	0	5	35·8	38 41·19	41·65	+ 0·46	68 28 44·73	45·90	+ 1·17	16 5·30
	16	0	5	41·7	42 43·70	44·21	+ 0·51	68 38 28·41	27·70	— 0·71	15 59·36
	17	0	5	47·9	46 46·38	46·25	— 0·13	68 48 29·31	31·30	+ 1·99	16 1·88
	18	0	5	52·6	50 47·75	47·78	+ 0·03	——	—	—	16 0·04
	19	0	5	56·4	54 48·05	48·74	+ 0·69	69 9 43·64	43·10	— 0·54	16 5·14
	20	0	6	0·4	58 48·60	49·16	+ 0·56	69 20 50·19	50·80	+ 0·61	16 1·94
	26	0	6	11·5	8 22 39·10	39·31	+ 0·21	70 34 44·10	45·40	+ 1·30	15 59·84
	27	0	6	11·6	26 35·75	35·55	— 0·20	70 48 13·02	13·50	+ 0·48	15 57·96
	28	0	6	10·4	30 31·11	31·18	+ 0·07	——	—	—	15 59·20
	29	0	6	9·2	34 26·51	26·19	— 0·32	71 16 2·75	6·50	+ 3·75	16 0·70
Aug.	3	0	5	52·	——	—	—	72 31 9·32	7·00	— 2·32	——
	4	0	5	47·	——	—	—	72 46 61·15	59·40	— 1·75	16 2·45
	5	0	5	41·	——	—	—	73 3 8·31	8·60	+ 0·29	16 2·45
	6	0	5	35·2	9 5 24·84	24·57	— 0·27	73 19 34·35	34·30	— 0·05	16 1·62
	7	0	5	28·3	9 14·49	14·24	— 0·25	——	—	—	——
	9	0	5	12·7	16 51·89	51·85	— 0·04	74 10 26·71	27·30	+ 0·59	16 1·28
	10	0	5	3·6	20 39·36	39·82	+ 0·46	74 27 55·23	56·00	+ 0·77	16 2·83
	11	0	4	54·5	24 26·83	27·24	+ 0·41	——	—	—	15 59·60
	12	0	4	45·0	28 13·85	14·08	+ 0·23	75 3 40 30	38·30	— 2·00	16 2·67
	13	0	4	35·0	32 0·36	0·38	+ 0·02	75 21 50·08	51·20	+ 1·12	16 2·72
	14	0	4	24·3	37 46·20	46·17	— 0·03	75 40 18·41	18·20	— 0·21	16 0·82
	19	0	3	22·5	54 26·97	27·17	+ 0·20	——	—	—	15 57·30
	23	0	2	21·4	10 9 14·96	14·93	— 0·03	——	—	—	——
	24	0	2	8·7	12 55·75	55·70	— 0·05	78 56 28·74	29·00	+ 0·26	16 3·52
	25	0	1	52·9	16 36·41	36·05	— 0·36	——	—	—	——
	26	0	1	35·5	20 15·55	15·97	+ 0·42	79 37 59·15	59·10	— 0·05	16 2 90
	27	0	1	18·9	23 55·45	55·49	+ 0·04	79 58 58·01	58·90	+ 0·89	16 3·67
	28	0	1	1·5	27 34·58	34·62	+ 0·04	80 20 3·80	8·30	+ 4 50	16 2·45
	29	0	0	43·6	31 13·18	13·39	+ 0·21	——	—	—	16 1·15
	31	23	59	48·2	42 7·26	7·69	+ 0·43	——	—	—	——
Sept.	1	23	59	29·1	10 45 44·65	45·19	+ 0·54	82 8 6·99	6·80	— 0·19	15 58·34
	2	23	59	10·4	49 22·48	22·44	— 0·04	82 30 5·00	6·70	+ 1·70	15 57·17
	3	23	58	50·9	52 59·46	59·43	— 0·03	82 52 13·79	14·10	+ 0·31	16 1·04
	6	23	57	50·5	11 3 48·59	49·15	+ 0·56	83 59 15·27	17·20	+ 1·93	15 58·87
	8	23	57	10·0	11 1·08	1·41	+ 0·33	——	—	—	——
	10	23	56	29·	——	—	—	85 30 3·22	5·30	+ 2·08	15 59·77
	14	23	55	5·0	32 35·03	35·51	+ 0·48	87 2 7·62	10·00	+ 2·38	15 59·52
	15	23	54	43·6	36 10·14	10·97	+ 0·83	87 25 22·21	20·40	— 1·81	15 58·96
	16	23	54	22·8	39 45·84	46·40	+ 0·56	87 48 31·84	33·90	+ 2·06	16 0·90
	17	23	54	2·0	43 21·58	21·83	+ 0·25	88 11 49·67	50·00	+ 0·33	16 0·70

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, (*Continued*)

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1852.	*d.*	*h.*	*m.*	*s.*	*h. m. s.*	*s.*	*s.*	° ′ ″	″	″	′ ″
April	14	0	0	14·3	1 30 35·61	35·53	— 0·08	80 30 41·44	49·30	+ 7·86	15 58·40
	14	23	59	59·3	34 17·12	17·06	— 0·06	80 9 17·53	20·50	+ 2·97	16 2·85
	15	23	59	44·2	37 58·55	58·96	+ 0·41	79 48 2·48	1·30	— 1·18	16 1·46
	16	23	59	30·4	41 41·23	41·24	+ 0·01	79 26 50·72	52·20	+ 1·48	16 1·26
	18	23	59	3·1	49 6·98	6·99	+ 0·01	78 45 6·07	5·30	— 0·77	16 1·98
	19	23	58	50·1	52 50·47	50·49	+ 0·02	78 24 24·46	28·20	+ 3·74	16 2·43
	20	23	58	37·4	56 34·36	34·42	+ 0·06	78 4 2·19	2·50	+ 0·31	—
	21	23	58	25·3	2 0 18·79	18·77	— 0·02	77 43 44·67	48·60	+ 3·93	16 2·32
	22	23	58	13·4	4 3·38	3·57	+ 0·19	77 23 46·22	46·80	+ 0·58	16 1·44
	23	23	58	2·3	7 48·76	48·81	+ 0·05	77 3 57·34	57·50	+ 0·16	16 2·03
	26	23	57	31·3	19 7·33	7·33	0·00	76 5 49·10	47·60	— 1·50	16 2·40
	27	23	57	21·9	22 54·53	54·48	— 0·05	75 46 50·23	51·30	+ 1·07	15 59·12
	28	23	57	13·0	26 42·15	42·12	— 0·03	75 28 7·11	9·30	+ 2·19	16 1·37
	29	23	57	4·4	30 30·12	30·28	+ 0·16	75 9 40·99	41·60	+ 0·61	16 2·36
	30	23	56	56·6	34 18·76	18·95	+ 0·19	74 51 27·75	28·70	+ 0·95	16 0·97
May	2	23	56	43·0	2 41 58·29	57·89	— 0·40	—	—	—	16 1·90
	5	23	56	26·	—	—	—	73 24 15·03	15·20	+ 0·17	15 59·56
	6	23	56	20·9	57 22·31	22·48	+ 0·17	73 7 39·12	36·80	— 2·32	16 0·24
	7	23	56	17·4	3 1 15·35	15·06	— 0·29	72 51 13·67	15·10	+ 1·43	15 59·23
	8	23	56	14·1	5 8·64	8·24	— 0·40	—	—	—	15 57·75
	9	23	56	10·5	9 1·58	2·01	+ 0·43	72 19 23·54	23·20	— 0·34	16 0·44
	11	23	56	7·	—	—	—	71 48 41·77	41·60	— 0·17	15 57·24
	12	23	56	6·7	20 47·40	46·89	— 0·51	71 33 47·78	48·00	+ 0·22	16 1·66
	13	23	56	6·2	24 43·47	43·04	— 0·43	71 19 11·38	12·80	+ 1·42	16 0·80
	14	23	56	5·5	28 39·31	39·78	+ 0·47	71 4 56·00	56·50	+ 0·50	15 58·50
	17	23	56	10·1	40 33·63	33·48	— 0·15	—	—	—	15 59·90
	18	23	56	12·6	44 32·65	32·51	— 0·14	70 11 5·94	4·50	— 1·44	15 59·64
	19	23	56	14·7	48 31·37	32·10	+ 0·73	69 58 29·23	26·20	— 3·03	15 59·40
	20	23	56	19·3	52 32·47	32·22	— 0·25	69 46 9·50	8·60	— 0·90	16 1·15
	21	23	56	23·3	56 33·04	32·87	— 0·17	69 34 12·69	11·60	— 1·09	16 0·50
	24	23	56	38·6	4 8 38·06	37·87	— 0·19	69 0 26·15	27·60	+ 1·45	—
	25	23	56	44·6	12 40·68	40·51	— 0·17	68 49 52·64	56·00	+ 3·36	16 1·40
	26	23	56	51·0	16 43·66	43·61	— 0·05	68 39 45·51	46·50	+ 0·99	16 0·84
	27	23	56	58·3	20 47·51	47·16	— 0·35	68 29 53·15	59·00	+ 5·85	15 58·67
	28	23	57	5·4	24 51·23	51·17	— 0·06	68 20 32·77	34·00	+ 1·23	16 1·88
	29	23	57	13·3	28 55·66	55·60	— 0·06	—	—	—	16 0·68
	30	23	57	21·1	33 0·07	0·46	+ 0·39	68 2 51·26	51·70	+ 0·44	16 0·42
	31	23	57	30·1	37 5·63	5·73	+ 0.10	67 54 32·45	34·70	+ 2·25	16 3·05
June	1	23	57	39·1	4 41 11·20	11·39	+ 0·19	67 46 41·27	41·00	— 0·27	16 2·20
	2	23	57	38·6	45 17·32	17·43	+ 0·11	—	—	—	16 1·90
	3	23	57	58·4	49 23·73	23·85	+ 0·12	67 32 2·17	3·10	+ 0·93	16 2·05
	4	23	58	8·9	53 30·73	30·60	— 0·13	67 25 24·13	19·50	— 4·63	16 2·76
	5	23	58	18·9	57 37·40	37·72	+ 0·32	—	—	—	16 0·48
	6	23	58	30·1	5 1 45·10	45·16	+ 0·06	67 13 2·39	3·10	+ 0·71	16 2·70
	7	23	58	41·5	5 53·17	52·00	— 0·27	67 7 28·30	30·80	+ 2·50	16 1·46
	8	23	58	52·0	10 0·25	0·93	+ 0·68	67 2 22·14	22·40	+ 0·26	16 3·47
	9	23	59	4·3	14 9·06	9·23	+ 0·17	66 57 37·59	38·30	+ 0·71	15 58·76
	10	23	59	16·3	18 17·71	17·78	+ 0·07	66 53 18·12	18·40	+ 0·28	16 3·12
	12	23	59	40·2	26 34·83	35·56	+ 0·73	—	—	—	16 2·72
	13	23	59	53·2	30 44·33	44·72	+ 0·39	66 42 44·04	45·00	+ 0·96	16 2·27
	15	0	0	5·9	34 53·62	54·03	+ 0·41	66 40 2·67	3·00	+ 0·33	15 59·95
	17	0	0	32·	—	—	—	66 35 52·87	53·00	+ 0·13	16 2·96
	18	0	0	45·	—	—	—	66 34 27·64	25·20	— 2·44	16 2·12
	19	0	0	58·	—	—	—	66 33 22·00	22·20	+ 0·20	16 2·20
	21	0	1	24·	—	—	—	66 32 31·23	30·60	— 0·63	16 1·46

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, (*Continued.*)

Mean Solar Time of Observation					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1852.	*d*	*h.*	*m.*	*s.*	*h. m. s.*	*s.*	*s.*	° ′ ″	″	″	′ ″
June	25	0	2	15·4	6 16 29·14	29·53	+ 0·39	——	—	—	——
	28	0	2	52·7	28 56·16	56·58	+ 0·42	66 42 34·17	31·00	— 3·17	16 2·38
	29	0	3	4·7	33 4·72	5·22	+ 0·50	66 45 37·97	35·50	— 2·47	16 1·64
July	2	0	3	40·	——	—	—	66 57 12·44	14·70	+ 2·26	16 0·40
	3	0	3	51·	——	—	—	67 1 58·30	56·20	— 2·10	15 59·00
	4	0	4	1·1	6 53 44·15	44·73	+ 0·58	——	—	—	16 3·12
	5	0	4	11·6	57 51·21	51·77	+ 0·56	67 12 35·11	31·10	— 4·01	16 1·92
	6	0	4	22·1	7 1 58·30	58·49	+ 0·19	67 18 26·35	24·20	— 2·15	16 1·50
	7	0	4	32·2	6 4·94	4·86	— 0·08	67 24 40·84	41·00	+ 0·16	16 0·10
	9	0	4	50·9	14 16·83	16·54	— 0·29	67 38 24·08	24·60	+ 0·52	15 59·38
	10	0	4	58·9	18 21·43	21·80	+ 0·37	67 45 48·46	51·30	+ 2·84	16 1·82
	11	0	5	8·0	22 27·04	26·67	— 0·37	——	—	—	16 1·24
	12	0	5	15·1	26 30·76	31·10	+ 0·34	68 1 53·53	53·50	— 0·03	16 0·46
	13	0	5	22·5	30 34·72	35·09	+ 0·37	68 10 27·25	28·60	+ 1·35	16 0·13
	14	0	5	29·3	34 38·11	38·61	+ 0·50	68 19 24·69	26·20	+ 1·51	16 1·00
	15	0	5	35·8	38 41·19	41·65	+ 0·46	68 28 44·73	45·90	+ 1·17	16 5·30
	16	0	5	41·7	42 43·70	44·21	+ 0·51	68 38 28·41	27·70	— 0·71	15 59·36
	17	0	5	47·9	46 46·38	46·25	— 0·13	68 48 29·31	31·30	+ 1·99	16 1·38
	18	0	5	52·6	50 47·75	47·78	+ 0·03	——	—	—	16 0·04
	19	0	5	56·4	54 48·05	48·74	+ 0·69	69 9 43·64	43·10	— 0·54	16 5·14
	20	0	6	0·4	58 48·60	49·16	+ 0·56	69 20 50·19	50·80	+ 0·61	16 1·94
	26	0	6	11·5	8 22 39·10	39·31	+ 0·21	70 34 44·10	45·40	+ 1·30	15 59·84
	27	0	6	11·6	26 35·75	35·55	— 0·20	70 48 13·02	13·50	+ 0·48	15 57·96
	28	0	6	10·4	30 31·11	31·18	+ 0·07	——	—	—	15 59·20
	29	0	6	9·2	34 26·51	26·19	— 0·32	71 16 2·75	6·50	+ 3·75	16 0·70
Aug.	3	0	5	52·	——	—	—	72 31 9·32	7·00	— 2·32	——
	4	0	5	47·	——	—	—	72 46 61·15	59·40	— 1·75	16 2·45
	5	0	5	41·	——	—	—	73 3 8·31	8·60	+ 0·29	16 2·45
	6	0	5	35·2	9 5 24·84	24·57	— 0·27	73 19 34·35	34·30	— 0·05	16 1·62
	7	0	5	28·3	9 14·49	14·24	— 0·25	——	—	—	——
	9	0	5	12·7	16 51·89	51·85	— 0·04	74 10 26·71	27·30	+ 0·59	16 1·28
	10	0	5	3·6	20 39·36	39·82	+ 0·46	74 27 55·23	56·00	+ 0·77	16 2·83
	11	0	4	54·5	24 26·83	27·24	+ 0·41	——	—	—	15 59·60
	12	0	4	45·0	28 13·85	14·08	+ 0·23	75 3 40·30	38·30	— 2·00	16 2·67
	13	0	4	35·0	32 0·36	0·38	+ 0·02	75 21 50·08	51·20	+ 1·12	16 2·72
	14	0	4	24·3	37 46·20	46·17	— 0·03	75 40 18·41	18·20	— 0·21	16 0·82
	19	0	3	22·5	54 26·97	27·17	+ 0·20	——	—	—	15 57·30
	23	0	2	24·4	10 9 14·96	14·93	— 0·03	——	—	—	——
	24	0	2	8·7	12 55·75	55·70	— 0·05	78 56 28·74	29·00	+ 0·26	16 3·52
	25	0	1	52·9	16 36·41	36·05	— 0·36	——	—	—	——
	26	0	1	35·5	20 15·55	15·97	+ 0·42	79 37 59·15	59·10	— 0·05	16 2·90
	27	0	1	18·9	23 55·45	55·49	+ 0·04	79 58 58·01	58·90	+ 0·89	16 3·67
	28	0	1	1·5	27 34·58	34·62	+ 0·04	80 20 3·80	8·30	+ 4·50	16 2·45
	29	0	0	43·6	31 13·18	13·39	+ 0·21	——	—	—	16 1·15
	31	23	59	48·2	42 7·26	7·69	+ 0·43	——	—	—	——
Sept.	1	23	59	29·1	10 45 44·65	45·19	+ 0·54	82 8 6·99	6·80	— 0·19	15 58·34
	2	23	59	10·4	49 22·48	22·44	— 0·04	82 30 5·00	6·70	+ 1·70	15 57·17
	3	23	58	50·9	52 59·46	59·43	— 0·03	82 52 13·79	14·10	+ 0·31	16 1·04
	6	23	57	50·5	11 3 48·59	49·15	+ 0·56	83 59 15·27	17·20	+ 1·93	15 58·87
	8	23	57	10·0	11 1·08	1·41	+ 0·33	——	—	—	——
	10	23	56	29·	——	—	—	85 30 3·22	5·30	+ 2·08	15 59·77
	14	23	55	5·0	32 35·03	35·51	+ 0·48	87 2 7·62	10·00	+ 2·38	15 59·52
	15	23	54	43·6	36 10·14	10·97	+ 0·83	87 25 22·21	20·40	— 1·81	15 58·96
	16	23	54	22·8	39 45·84	46·40	+ 0·56	87 48 31·84	33·90	+ 2·06	16 0·90
	17	23	54	2·0	43 21·58	21·83	+ 0·25	88 11 49·67	50·00	+ 0·33	16 0·70

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE SUN'S CENTRE, *(Continued.)*

Mean Solar Time of Observation.					A. R. from Observation.	A. R. from N. A.	Error of N. A.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.	Mean Hor. Semid.
1852.	*d.*	*h.*	*m.*	*s.*	*h. m. s.*	*s*	*s.*	° ′ ″	″	″	′ ″
Sept.	19	23	53	19·8	11 50 32·36	32·75	+ 0·39	88 58 27·05	28·90	+ 1·85	15 58·83
	20	23	52	59·4	54 8·39	8·26	— 0·13	89 21 53·67	50·90	— 2·77	15 59·68
	21	23	52	37·7	57 43·22	43·86	+ 0·64	89 45 14·62	14·10	— 0·52	16 0·22
	22	23	52	17·3	12 1 19·32	19·55	+ 0·23	90 8 38·66	38·10	— 0·56	16 2·50
	23	23	51	56·6	4 55·11	55·36	+ 0·25	90 32 1·08	2·80	+ 1·72	15 59·93
	24	23	51	35·9	8 30·91	31·30	+ 0·39	90 55 27·65	27·70	+ 0·05	15 59·95
	25	23	51	16·0	12 7·53	7·40	— 0·13	——	—	—	16 0·50
	26	23	50	55·1	15 43·10	43·69	+ 0·59	91 42 17·83	16·80	— 1·03	15 59·47
	27	23	50	35·5	19 19·96	20·17	+ 0·21	92 5 38·31	40·30	+ 1·99	16 0·15
	28	23	50	15·5	22 56·50	56·90	+ 0·40	——	—	—	15 59·88
	29	23	49	56·0	26 33·50	33·89	+ 0·39	92 52 24·55	23·80	— 0·75	16 0·24
	30	23	49	37·7	30 11·71	11·14	— 0·57	——	—	—	——
Oct.	2	23	48	59·2	12 37 26·20	26·61	+ 0·41	——	—	—	15 56·14
	3	23	48	41·5	41 5·02	4·85	— 0·17	94 25 27·13	27·10	— 0·03	16 0·48
	4	23	48	23·9	44 43·87	43·47	— 0·40	94 48 35·08	36·10	+ 1·02	16 1·94
	5	23	48	6·4	48 22·92	22·47	— 0·45	95 11 41·86	41·60	— 0·26	16 5·10
	10	23	46	45·4	13 6 44·47	44·09	— 0·38	97 6 1·54	4·80	+ 3·26	16 1·28
	11	23	46	30·7	10 26·24	25·85	— 0·39	97 28 40·52	41·80	+ 1·28	16 2·80
	13	23	46	2·6	17 51·19	50·92	— 0·27	——	—	—	——
	14	23	45	49·3	21 34·41	34·26	— 0·15	98 35 48·17	54·90	+ 6·73	15 58·60
	15	23	45	36·3	25 17·91	18·17	+ 0·26	98 58 8·17	5·20	— 2·97	16 2·96
	17	23	45	12·9	32 47·63	47·70	+ 0·07	——	—	—	——
	22	23	44	25·3	51 42·60	42·33	— 0·27	101 29 19·03	17·70	— 1·33	——
	25	23	44	4·8	14 3 11·70	11·14	— 0·56	102 31 36·82	35·90	— 0·92	——
	26	23	43	59·1	7 2·61	2·19	— 0·42	102 51 59·73	59·10	— 0·63	16 3·90
	27	23	43	54·4	10 54·45	53·97	— 0·48	103 12 8·20	10·20	+ 2·00	16 2·56
	28	23	43	50·2	14 46·78	46·54	— 0·24	103 32 6·92	8·90	+ 1·98	16 4·07
	29	23	43	46·6	18 39·71	39·87	+ 0·16	103 51 53·26	54·70	+ 1·44	16 4·16
Nov.	1	23	43	41·7	14 30 24·45	24·64	+ 0·19	104 49 53·09	51·50	— 1·59	15 59·70
	2	23	43	41·2	34 20·52	21·21	+ 0·69	105 8 45·57	42·20	— 3·37	——
	5	23	43	47·	——	—	—	106 3 44·33	44·00	— 0·33	——
	8	23	43	59·9	58 18·55	18·48	— 0·07	——	—	—	15 57·20
	10	23	44	13·0	15 6 24·82	24·44	— 0·38	107 30 2·54	1·30	— 1·24	16 0·00
	11	23	44	20·4	10 28·78	28·69	— 0·09	107 46 23·73	24·10	+ 0·37	15 57·86
	14	23	44	48·8	22 46·89	46·56	— 0·33	108 33 44·28	39·90	— 4·38	15 59·90
	15	23	44	59·6	26 54·35	54·20	— 0·15	108 48 45·16	46·10	+ 0·94	16 3·30
	19	23	45	52·0	43 33·08	32·91	— 0·17	109 45 47·03	45·70	— 1·33	16 0·50
	21	23	46	22·5	51 56·81	57·06	+ 0·25	110 12 4·30	6·70	+ 2·40	15 59·38
	22	23	46	39·1	56 9·97	10·29	+ 0·32	110 24 42·50	43·90	+ 1·40	15 59·56
	23	23	46	56·8	16 0 24·29	24·29	0·00	110 36 59·36	58·30	— 1·06	15 58·63
	24	23	47	15·0	4 39·13	39·06	— 0·07	110 48 46·28	49·70	+ 3·42	16 0·64
	25	23	47	33·9	8 54·63	54·56	— 0·07	111 0 19·28	17·70	— 1 58	15 57·75
Dec.	2	23	50	6·0	16 39 3·00	2·82	— 0·18	112 9 10·73	14·40	+ 3·67	16 1·22
	5	23	51	20·9	52 7·78	7·35	— 0·43	112 32 28·72	27·90	— 0·82	16 3·34
	7	23	52	13·4	17 0 53·53	53·13	— 0·40	112 45 45·86	45·10	— 0·76	16 2·23
	9	23	53	7·3	9 40·77	40·81	+ 0·04	——	—	—	——
	10	23	53	35·8	14 5·91	5·28	— 0·63	——	—	—	——
	14	23	55	30·1	31 46·76	46·53	— 0·23	——	—	—	——
	15	23	56	0·0	36 13·22	12·51	— 0·71	——	—	—	——
	16	23	56	28·7	40 38·56	38·68	+ 0·12	113 23 3·58	2·20	— 1·38	16 4·60
	20	23	58	28·4	58 24·91	24·59	— 0·32	113 27 26·49	29·10	+ 2·61	16 2·72
	26	0	0	57·7	18 20 37·35	37·24	— 0·11	——	—	—	15 59·86
	28	0	1	56·8	29 29·71	29·59	— 0·12	——	—	—	15 58·07
	30	0	2	55·5	38 21·71	21·17	— 0·54	——	—	—	15 59·03
	31	0	3	24·5	42 47·34	46·62	— 0·72	——	—	—	——

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE MOON'S CENTRE.

Mean Solar Time of Observation.					I or II Limb.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	N or S Limb.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1848.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Jan.	13	5	58	0·1	I	1 27 36·32	37·13	+ 0·81	S	82 38 23·23	21·94	— 1·29
	14	6	50	59·6	I	2 24 41·72	42·49	+ 0·77	S	78 33 54·93	53·30	— 1·63
	17	9	37	7·5	I	5 23 8·03	8·78	+ 0·75	S	71 45 56·19	65·81	+ 9·62
	18	10	33	8·9	I	6 23 14·81	15·58	+ 0·77	S	71 42 0·76	0·20	— 0·56
	19	11	27	54·4	I	7 22 5·94	5·66	— 0·28	S	72 46 5·30	1·55	— 3·75
	20	12	21	40·9	I·II	8 18 51·04	51·44	+ 0·40	S	74 49 48·73	46·70	— 2·03
	21	13	12	51·9	II	9 13 3·29	4·26	+ 0·97	S	77 40 34·84	39·09	+ 4·25
	22	14	0	24·1	II	10 4 42·32	42·54	+ 0·22	S	81 4 48·60	44·67	— 3·93
	25	16	12	24·8	II	12 28 55·96	55·98	+ 0·02	S	92 35 14·79	6·85	— 7·94
	27	17	38	13·7	II	14 2 51·79	52·12	+ 0·33	S	99 46 19·57	4·25	—15·32
Feb.	12	6	36	49·2	I	4 4 49·58	50·53	+ 0·95	—	——	—	—
	16	10	13	16·7	I	7 57 36·69	37·44	+ 0·75	N	74 0 6·19	6·15	— 0·04
	17	11	3	31·3	I	8 51 54·85	55·38	+ 0·53	N	76 29 7·53	4·49	— 3·04
	18	11	51	34·9	I	9 44 1·60	2·22	+ 0·62	S	79 36 62·05	55·52	— 6·53
	22	14	50	23·7	II	12 57 5·46	5·73	+ 0·27	S	94 42 16·45	6·13	—10·32
	23	15	33	22·8	II	13 44 7·73	8·06	+ 0·33	S	98 16 36·88	26·28	—10·60
	24	16	17	3·2	II	14 31 51·35	51·42	+ 0·07	S	101 29 27·56	17·68	— 9·88
Mar.	13	7	17	28·3	I	6 43 50·95	52·08	+ 1·13	N	72 9 17·24	21·14	+ 3·90
	14	8	9	55·4	I	7 40 21·87	22·94	+ 1·07	N	73 28 28·14	28·01	— 0·13
	15	9	0	10·0	I	8 34 40·29	41·20	+ 0·91	N	75 39 58·42	56·96	— 1·46
	16	9	48	12·8	I	9 26 46·06	46·62	+ 0·56	N	78 32 53·39	50·20	— 3·19
	17	10	34	16·5	I	10 16 53·06	53·77	+ 0·71	N	81 55 53·07	47·84	— 5·23
	18	11	18	47·1	I	11 5 26·69	27·23	+ 0·54	N	85 37 55·42	50·41	— 5·01
	19	12	2	14·0	I	11 52 56·55	56·99	+ 0·44	N	89 28 37·79	36·64	— 1·15
	20	12	47	10·2	II	12 39 58·51	58·86	+ 0·35	S	93 18 53·11	45·17	— 7·94
	21	13	30	5·8	II	13 26 57·08	57·11	+ 0·03	S	96 58 45·74	37·61	— 8·13
	22	14	13	29·8	II	14 14 24·57	25·04	+ 0·47	S	100 20 7·81	2·84	— 4·97
	23	14	57	50·4	II	15 2 48·01	48·48	+ 0·47	S	103 14 56·67	55·37	— 1·30
	24	15	43	26·6	II	15 52 27·47	27·69	+ 0·22	S	105 35 25·03	28·74	+ 3·71
	25	16	30	30·8	II	16 43 35·09	35·05	— 0·04	S	107 14 17·56	17·62	+ 0·06
April	11	6	57	21·2	I	8 17 58·46	59·30	+ 0·84	N	74 52 16·62	16·73	+ 0·11
	12	7	46	15·5	I	9 10 56·63	57·40	+ 0·77	N	77 34 12·44	13·87	+ 1·43
	13	8	32	46·8	I	10 1 30·27	31·41	+ 1·14	N	80 48 48·82	46·86	— 1·96
	14	9	17	25·8	I	10 50 11·94	11·62	— 0·32	N	84 24 60·29	58·50	— 1·79
	15	10	0	47·7	I	11 37 37·12	37·85	+ 0·73	N	88 12 50·48	49·60	— 0·88
	17	11	26	10·7	I	13 11 7·18	7·68	+ 0·50	—	——	—	—
	18	12	11	21·4	II	13 58 23·12	23·14	+ 0·02	N	99 16 39·66	39·06	— 0·60
	19	12	55	23·7	II	14 46 28·53	28·78	+ 0·25	S	102 22 29·04	26·11	— 2·93
	20	13	40	38·5	II	15 35 46·59	46·56	— 0·03	S	104 56 30·38	29·40	— 0·98
May	10	6	29	56·8	I	9 44 48·05	48·62	+ 0·57	N	79 31 20·46	24·66	+ 4·20
	11	7	15	40·6	I	10 34 34·49	35·23	+ 0·74	N	83 4 29·57	29·21	— 0·36
	12	7	59	34·6	I	11 22 31·13	32·25	+ 1·12	N	86 51 30·13	31·75	+ 1·62
	13	8	42	23·9	I	12 9 23·91	24·86	+ 0·95	N	90 43 13·52	14·75	+ 1·23
	15	10	7	39·1	I	13 42 46·35	46·85	+ 0·50	N	98 7 34·00	31·97	— 2·03
	16	10	51	16·1	I	14 30 28·08	28·26	+ 0·18	N	101 23 49·59	49·14	— 0·45
	17	11	36	8·6	I	15 19 24·78	24·93	+ 0·15	N	104 11 41·58	40·57	— 1·01
	18	12	24	35·5	II	16 9 53·79	53·84	+ 0·05	N	106 22 46·54	45·54	— 1·00
	19	13	12	23·7	II	17 1 45·60	45·61	+ 0·01	—	——	—	—
	20	14	1	24·6	II	17 54 50·31	50·46	+ 0·15	N	108 23 12·85	15·65	+ 2·80
June	19	14	29	14·3	II	20 21 0·77	1·23	+ 0·46	N	105 28 1·51	1·22	— 0·29
	20	15	19	45·1	II	21 15 36·37	37·04	+ 0·67	N	102 40 19·40	23·65	+ 4·25

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE MOON'S CENTRE, (*Continued.*)

Mean Solar Time of Observation.					I or II Limb.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	N or S Limb.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1848.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Aug.	10	8	29	34·5	I	17 47 30·18	30·42	+ 0·24	N	108 14 54·41	54·85	+ 0·44
	15	12	50	38·3	II	22 26 51·59	52·26	+ 0·67	N	98 9 35·08	33·50	— 1·58
Sept.	7	7	9	40·4	I	18 17 46·40	46·91	+ 0·51	N	108 13 56·01	61·78	+ 5·77
	8	8	0	4·0	I	19 12 15·60	15·15	— 0·45	S	107 36 51·44	53·29	+ 1·85
	9	8	51	25·9	I	20 7 42·81	42·91	+ 0·10	S	106 0 56·37	52·87	— 3·50
	13	12	24	2·3	II	23 54 30·51	31·07	+ 0·56	N	91 16 9·05	8·69	— 0·36
	14	13	17	39·3	II	0 52 22·21	22·41	+ 0·20	N	86 31 39·54	39·58	+ 0·04
	15	13	53	32·7	II	1 51 7·53	8·32	+ 0·79	N	81 58 59·42	58·53	— 0·89
Dec.	4	6	34	7·4	I	23 29 4·62	5·63	+ 1·01	S	93 44 16·17	9·82	— 6·35
	6	8	16	30·1	I	1 19 38·83	40·26	+ 1·43	S	84 33 62·25	55·48	— 6·77
	8	10	8	59·0	I	3 20 22·66	23·77	+ 1·11	S	76 15 36·29	31·97	— 4·32
	9	11	9	25·6	I	4 24 56·76	57·82	+ 1·06	S	73 20 20·11	14·33	— 5·78
1849.												
Jan.	3	7	0	55·8	I	1 54 15·53	16·29	+ 0·76	S	82 7 48·11	43·13	— 4·98
	4	7	54	54·8	I	2 52 21·74	22·90	+ 1·16	S	78 5 38·71	33·60	— 5·11
	8	11	53	20·8	I	7 7 15·65	16·96	+ 1·31	S	71 46 19·70	16·61	— 3·09
Feb.	1	6	43	47·5	I	3 31 25·63	26·29	+ 0·66	S	76 1 2·52	2·28	— 0·24
	2	7	40	8·8	I	4 31 54·75	55·40	+ 0·65	S	73 21 14·25	9·98	— 4·27
	3	8	38	23·8	I	5 34 15·78	16·64	+ 0·86	S	71 47 47·11	42·46	— 4·65
	5	10	36	11·3	I	7 40 15·34	16·80	+ 1·46	N	72 30 47·62	45·53	— 2·09
	6	11	33	8·2	I	8 41 17·25	18·39	+ 1·14	—	——	—	—
Mar.	2	6	32	26·9	I	5 14 24·93	25·62	+ 0·69	S	72 13 20·71	18·32	— 2·39
	3	7	29	58·8	I	6 16 2·17	3·13	+ 0·96	S	71 30 47·12	45·00	— 2·12
	5	9	23	11·6	I	8 17 26·28	27·56	+ 1·28	N	73 44 10·36	9·06	— 1·30
	6	10	17	10·3	I	9 15 29·68	30·77	+ 1·09	N	76 25 32·11	30·52	— 1·59
	7	11	8	51·0	I	10 11 12·85	13·93	+ 1·08	N	79 52 19·83	14·85	— 4·98
	8	11	58	14·8	I	11 4 40·29	41·12	+ 0·83	N	83 48 31·49	35·37	+ 3·88
	12	15	3	56·9	II	14 24 35·81	36·49	+ 0·68	S	99 47 48·68	48·38	— 0·30
	13	15	48	58·3	II	15 13 40·93	41·46	+ 0·53	S	102 56 4·12	5·60	+ 1·48
	14	16	34	31·1	II	16 3 17·28	17·68	+ 0·40	S	105 27 40·80	44·12	+ 3·32
	31	6	22	53·3	I	6 59 9·18	10·04	+ 0·86	N	71 41 23·72	24·60	+ 0·88
April	2	8	12	39·0	I	8 57 3·62	5·04	+ 1·42	N	75 24 40·64	38·75	— 1·89
	3	9	3	59·7	I	9 52 27·98	29·41	+ 1·43	N	78 35 4·88	2·18	— 2·70
	30	7	1	43·4	I	9 36 18·66	19·39	+ 0·73	N	77 24 9·44	7·10	— 2·34
May	1	7	51	16·8	I	10 29 55·61	56·36	+ 0·75	N	81 0 15·42	12·67	— 2·75
	2	8	38	31·0	I	11 21 12·96	13·55	+ 0·59	N	84 58 52·73	50·76	— 1·97
	3	9	24	5·6	I	12 10 50·66	51·45	+ 0·79	N	89 7 18·30	13·63	— 4·67
	4	10	8	42·4	I	12 59 31·17	31·70	+ 0·53	N	93 14 3·53	0·95	— 2·58
	5	10	52	59·8	I	13 47 52·00	52·52	+ 0·52	N	97 8 57·55	57·23	— 0·32
	7	12	24	36·9	II	15 25 36·47	36·80	+ 0·33	N	103 46 13·40	18·35	+ 4·95
	8	13	10	27·5	II	16 15 30·64	30·85	+ 0·21	N	106 11 41·87	48·42	+ 6·55
	9	13	57	5·2	II	17 6 12·19	12·54	+ 0·35	N	107 52 35·85	41·64	+ 5·79
June	5	11	53	7·5	I.II	16 49 22·57	22·70	+ 0·13	N	107 27 33·06	39·84	+ 6·78
	6	12	41	24·6	II	17 40 36·27	36·46	+ 0·19	N	108 38 35·15	42·09	+ 6·94
July	3	10	36	15·7	I	17 23 43·90	44·12	+ 0·22	N	108 18 56·96	60·51	+ 3·55
	6	13	2	9·1	II	19 59 46·62	47·00	+ 0·38	N	107 34 5·71	9·53	+ 3·82
	10	16	10	26·8	II	23 24 21·62	22·24	+ 0·62	N	95 22 58·30	61·85	+ 3·55
	12	17	45	39·7	II	1 7 42·19	43·13	+ 0·94	N	86 37 13·50	14·52	+ 1·02

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE MOON'S CENTRE, (Continued.)

Mean Solar Time of Observation.					I or II Limb.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	N or S Limb.	N. P. D. from Observation.	N P. D. from N. A.	Error of N. A.
1849.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Aug.	8	14	43	43·3	II	0 51 53·43	53·73	+ 0·30	—	——	—	—
	13	20	11	34·5	II	5 40 5·27	5·62	+ 0·35	N	71 30 33·01	25·66	— 7·35
	23	4	9	0·6	I	14 16 28·96	29·72	+ 0·76	—	——	—	—
	24	4	54	34·4	I	15 6 6·15	6·61	+ 0·46	—	——	—	—
	25	5	40	18·6	I	15 55 55·14	55·74	+ 0·60	—	——	—	—
	31	10	26	2·8	I	21 6 6·32	6·56	+ 0·24	S	104 52 4·69	5·19	+ 0·50
Sept.	2	12	3	9·2	I·II	22 50 19·54	20·07	+ 0·53	N	98 10 20·06	25·64	+ 5·58
	12	20	59	1·3	II	8 25 57·91	58·49	+ 0·58	S	73 20 21·28	16·91	— 4·37
	26	7	29	32·1	I	19 51 37·12	36·89	— 0·23	S	107 50 4·76	4·19	— 0·57
	27	8	17	29·4	I	20 43 38·74	39·26	+ 0·52	S	105 58 44·63	46·45	+ 1·82
	29	9	53	24·2	I	22 27 42·59	42·98	+ 0·39	S	99 52 12·50	17·95	+ 5·45
Oct.	1	11	31	32·4	I·II	0 12 57·62	58·30	+ 0·68	S	91 24 3·69	3·69	0·00
	2	12	22	32·5	II	1 6 58·95	59·72	+ 0·77	S	86 46 13·60	12·69	— 0·91
	8	17	56	38·4	II	7 5 34·63	35·42	+ 0·79	S	71 10 60·36	58·52	— 1·84
	12	21	32	26·4	II	10 57 49·39	50·21	+ 0·82	S	82 20 52·99	51·38	— 1·61
	23	5	21	54·5	I	19 30 5·89	6·05	+ 0·16	—	——	—	—
	24	6	9	17·1	I	20 21 32·78	33·03	+ 0·25	S	107 3 48·53	49·41	+ 0·88
	25	6	56	28·2	I	21 12 47·66	47·74	+ 0·08	S	104 45 10·53	14·20	+ 3·67
	26	7	43	32·9	I	22 3 57·24	57·77	+ 0·53	S	101 40 44·23	46·94	+ 2·71
	27	8	30	52·2	I	22 55 20·44	21·16	+ 0·72	S	97 56 19·75	26·32	+ 6·57
	29	10	8	4·3	I	0 40 43·52	43·98	+ 0·46	S	89 3 49·65	52·62	+ 2·97
	30	10	59	8·5	I	1 35 53·23	54·28	+ 1·05	S	84 21 34·57	34·63	+ 0·06
	31	11	53	44·2	I·II	2 33 29·79	30·51	+ 0·72	S	79 51 53·92	52·37	— 1·55
Nov.	4	15	50	0·1	II	6 45 1·34	2·07	+ 0·73	S	70 47 31·92	24·80	— 7·12
	5	16	49	0·7	II	7 48 9·17	10·02	+ 0·85	S	71 46 17·15	11·14	— 6·01
	8	19	30	5·7	II	10 41 34·90	36·07	+ 1·17	—	——	—	—
	9	20	18	34·9	II	11 34 10·32	11·24	+ 0·92	S	85 7 32·95	25·94	— 7·01
	11	21	51	18·3	II	13 15 2·85	3·23	+ 0·38	—	——	—	—
	19	3	16	18·7	I	19 10 36·47	37·44	+ 0·97	—	——	—	—
	21	4	50	13·7	I	20 52 39·38	39·76	+ 0·38	—	——	—	—
	22	5	36	26·2	I	21 42 55·69	56·13	+ 0·44	—	——	—	—
	23	6	22	26·1	I	22 32 59·45	60·11	+ 0·66	S	99 54 18·38	18·39	+ 0·01
	24	7	8	41·6	I	23 23 19·68	20·63	+ 0·95	S	95 56 24·03	22·84	— 1·19
	26	8	44	45·7	I	1 7 34·95	35·89	+ 0·94	S	86 54 30·85	32·50	+ 1·65
	28	10	30	40·3	I	3 1 43·05	44·09	+ 1·04	S	77 56 43·36	44·44	+ 1·08
	29	11	28	37·4	I	4 3 47·88	48·85	+ 0·97	S	74 19 9·08	8·08	— 1·00
Dec.	2	14	36	52·8	II	7 22 4·81	5·54	+ 0·73	S	70 59 16·11	11·76	— 4·35
	10	21	20	32·5	II	14 38 32·98	33·10	+ 0·12	S	100 22 53·68	45·02	— 8·66
	11	22	6	2·6	II	15 28 6·33	6·74	+ 0·41	—	——	—	—
	20	4	18	25·6	I	22 15 5·26	5·73	+ 0·47	—	——	—	—
	21	5	3	31·6	I	23 4 14·97	15·41	+ 0·44	—	——	—	—
	27	10	7	21·1	I	4 32 41·96	43·13	+ 1·17	—	——	—	—
	29	12	13	55·3	I·II	6 46 20·83	21·73	+ 0·90	—	——	—	—
1850.												
Jan.	25	9	49	55·2	I	6 9 34·44	35·25	+ 0·81	S	70 41 20·65	15·20	— 5·45
	26	10	52	36·4	I	7 16 23·29	24·73	+ 1·44	N	70 48 46·91	47·57	+ 0·66
Feb.	4	18	46	41·0	II	15 45 1·97	2·19	+ 0·22	S	104 25 33·55	36·52	+ 2·97
	5	19	33	9·8	II	16 35 34·41	34·55	+ 0·14	S	106 53 53·67	57·31	+ 3·64
	6	20	20	8·4	II	17 26 37·25	36·74	— 0·51	S	108 33 53·48	59·46	+ 5·98
	7	21	7	33·6	II	18 18 6·80	6·40	— 0·40	—	——	—	—
	18	4	52	23·3	I	2 45 44·34	44·26	— 0·08	—	——	—	—

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE MOON'S CENTRE, (*Continued.*)

Mean Solar Time of Observation.					I or II Limb.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	N or S Limb.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1850.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Feb.	19	5	43	53·7	I	3 41 21·88	22·17	+ 0·29	—	—	—	—
	21	7	35	52·6	I	5 41 35·55	35·90	+ 0·35	S	71 6 32·71	30·05	— 2·66
	22	8	35	33·5	I	6 45 23·22	23·86	+ 0·64	—	—	—	—
	23	9	36	7·8	I	7 50 4·29	5·38	+ 1·09	N	71 27 43·32	41·17	— 2·15
	25	11	34	7·1	I	9 56 13·49	14·58	+ 1·09	N	77 7 46·00	45·23	— 0·77
	26	12	30	42·6	I·II	10 55 47·91	49·11	+ 1·20	N	81 22 30·41	27·37	— 3·04
	27	13	24	38·5	II	11 52 44·84	45·83	+ 0·99	—	—	—	—
	28	14	15	13·0	II	12 47 24·81	25·74	+ 0·93	S	90 51 59·60	58·06	— 1·54
Mar.	3	16	39	29·0	II	15 23 55·36	55·85	+ 0·49	S	103 11 37·73	39·95	+ 2·22
	5	18	14	17·2	II	17 6 52·13	52·79	+ 0·66	—	—	—	—
	6	19	1	56·3	II	17 58 35·87	35·89	+ 0·02	N	109 12 0·91	2·81	+ 1·90
	7	19	49	39·5	II	18 50 23·18	23·05	— 0·13	N	109 26 0·78	2·78	+ 2·00
	22	7	26	18·5	I	7 26 19·35	20·61	+ 1·26	N	70 52 32·42	35·23	+ 2·81
	23	8	24	34·1	I	8 28 40·59	41·64	+ 1·05	N	72 34 46·74	45·64	— 1·10
	25	10	16	24·8	I	10 28 41·05	42·05	+ 1·00	N	79 18 29·75	27·13	— 2·62
	26	11	9	16·9	I	11 25 37·04	37·75	+ 0·71	N	83 46 37·48	32·51	— 4·97
	27	12	0	19·0	I	12 20 43·22	43·47	+ 0·25	N	88 32 47·65	43·58	— 4·07
April	19	6	19	37·7	I	8 9 51·03	51·91	+ 0·88	N	71 43 24·60	21·74	— 2·86
	20	7	16	2·7	I	9 10 20·34	21·44	+ 1·10	N	74 14 25·09	23·19	— 1·90
	22	9	2	22·3	I	11 4 48·13	49·21	+ 1·08	N	81 56 47·38	43·56	— 3·82
	23	9	52	37·0	I	11 59 6·71	7·42	+ 0·71	N	86 33 55·09	50·62	— 4·47
	30	15	34	37·8	II	18 7 32·76	33·40	+ 0·64	N	109 41 22·61	27·87	+ 5·26
May	5	19	29	12·0	II	22 22 30·73	30·97	+ 0·24	—	—	—	—
	15	3	14	8·3	I	6 46 22·15	23·24	+ 1·09	—	—	—	—
	20	7	50	0·6	I	11 42 36·91	38·01	+ 1·10	N	84 54 44·70	40·65	— 4·05
	21	8	38	22·8	I	12 35 2·74	3·77	+ 1·03	N	89 36 22·53	20·08	— 2·45
	22	9	25	47·0	I	13 26 31·16	31·53	+ 0·37	N	94 14 35·16	34·83	— 0·33
	25	11	48	13·0	I	16 1 10·46	10·90	+ 0·44	N	105 40 21·70	22·46	+ 0·76
June	3	18	52	41·2	II	23 40 13·81	13·88	+ 0·07	N	95 26 26·29	33·53	+ 7·24
	5	20	24	17·8	II	1 19 56·76	56·91	+ 0·15	—	—	—	—
	19	8	11	15·3	I	14 2 10·51	11·00	+ 0·49	N	97 9 10·96	9·57	— 1·39
	22	10	32	42·1	I	16 35 50·46	51·16	+ 0·70	N	107 18 52·21	54·19	+ 1·98
July	2	18	17	3·0	II	0 58 49·43	49·78	+ 0·35	N	88 33 35·34	37·94	+ 2·60
	3	19	3	23·8	II	1 49 13·12	14·28	+ 1·16	N	84 3 36·80	31·77	— 5·03
	5	20	44	55·6	II	3 38 50·68	50·80	+ 0·12	N	75 45 53·86	58·71	+ 4·85
	18	7	43	7·3	I	15 28 17·83	18·24	+ 0·41	N	103 31 34·86	35·27	+ 0·41
Aug.	21	11	13	30·4	I	21 13 17·14	17·29	+ 0·15	S	106 12 0·81	0·53	— 0·28
Oct.	12	5	28	24·7	I	18 52 18·15	18·48	+ 0·33	—	—	—	—
	14	7	4	5·9	I	20 36 6·92	7·31	+ 0·39	S	108 7 35·01	40·18	+ 5·17
	15	7	50	12·0	I	21 26 16·22	16·54	+ 0·32	S	105 43 18·89	18·25	— 0·64
	17	9	19	38·7	I	23 3 50·10	50·60	+ 0·50	S	98 52 40·97	46·53	+ 5·56
	18	10	3	49·1	I	23 52 4·23	4·59	+ 0·36	S	94 42 8·11	10·65	+ 2·54
	28	18	49	22·6	II	9 16 21·72	22·26	+ 0·54	S	73 36 31·95	21·97	— 9·98
	29	19	44	14·5	II	10 15 20·16	20·70	+ 0·54	S	77 16 53·92	44·44	— 9·48
Nov.	11	5	43	52·0	I	21 6 2·92	3·23	+ 0·31	—	—	—	—
	13	7	13	25·4	I	22 43 43·37	43·40	+ 0·03	S	100 44 8·37	12·63	+ 4·26
	14	7	57	9·1	I	23 31 30·15	30·70	+ 0·55	S	96 44 26·80	33·31	+ 6·51
	15	8	41	1·3	I	0 19 26·43	27·31	+ 0·88	S	92 22 16·60	17·78	+ 1·18
	18	11	1	15·2	I	2 51 56·50	57·68	+ 1·18	S	78 45 13·40	12·02	— 1·38
	19	11	54	21·9	I·II	3 48 4·38	5·68	+ 1·30	S	74 50 56·23	52·88	— 3·35

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE MOON'S CENTRE, (*Continued.*)

Mean Solar Time of Observation					I or II Limb.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	N or S Limb.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1850.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Dec.	11	5	51	10·7	I	23 11 37·76	37·65	— 0·11	S	98 42 56·88	65·50	+ 8·62
	12	6	34	8·7	I	23 58 39·28	39·52	+ 0·24	S	94 32 33·32	35·21	+ 1·89
	13	7	17	30·9	I	0 46 5·62	6·04	+ 0·42	S	90 5 19·41	19·36	— 0·05
	14	8	2	10·9	I	1 34 50·41	51·10	+ 0·69	S	85 30 26·04	26·62	+ 0·58
	16	9	39	4·5	I	3 19 56·72	57·69	+ 0·97	S	76 46 59·51	57·49	— 2·02
	17	10	32	47·1	I	4 17 46·74	47·94	+ 1·20	S	73 11 52·18	49·75	— 2·43
	18	11	30	15·4	I	5 19 23·02	24·31	+ 1·29	S	70 35 19·83	16·77	— 3·06
1851.												
Jan.	8	4	29	50·6	I	23 40 27·67	27·44	— 0·23	S	96 21 24·83	24·44	— 0·39
	9	5	12	12·2	I	0 26 52·56	52·76	+ 0·20	—	——	—	—
	10	5	55	7·7	I	1 13 53·08	53·52	+ 0·44	S	87 36 40·97	41·07	+ 0·10
	11	6	39	35·9	I	2 2 25·60	26·12	+ 0·52	S	83 8 59.26	55·12	— 4·14
	13	8	16	53·7	I	3 47 56·62	57·76	+ 1·14	—	——	—	—
	14	9	11	16·7	I	4 46 27·44	28·57	+ 1·13	S	71 53 8·48	2·31	— 6·17
	15	10	9	41·3	I	5 49 0·10	1·49	+ 1·39	S	69 50 28·66	24·08	— 4·58
	16	11	11	12·4	I	6 54 38·83	40·26	+ 1·43	N	69 12 1·24	1·92	+ 0·68
	24	18	35	31·0	II	14 49 29·03	30·01	+ 0·98	—	——	—	—
	25	19	24	7·9	II	15 42 10·09	10·50	+ 0·41	—	——	—	—
	26	20	13	7·3	II	16 35 13·93	14·26	+ 0·33	—	——	—	—
	27	21	2	34·7	II	17 28 45·97	45·49	— 0·48	—	——	—	—
Feb.	8	5	19	53·3	I	2 32 54·23	54·88	+ 0·65	—	——	—	—
	10	6	57	46·9	I	4 19 0·80	1·37	+ 0·57	S	73 11 63·35	57·48	— 5·87
	11	7	52	14·6	I	5 17 36·49	37·40	+ 0·91	S	70 40 60·52	53·59	— 6·93
	12	8	50	25·4	I	6 19 55·12	56·25	+ 1·13	N	69 20 5·29	1·35	— 3·94
	19	15	38	12·1	II	13 34 10·05	10·73	+ 0·68	S	94 19 14·25	8·98	— 5·27
	20	16	28	56·8	II	14 29 0·03	0·12	+ 0·09	S	99 11 33·86	30·00	— 3·86
	21	17	19	5·8	II	15 23 14·19	14·69	+ 0·50	S	103 23 46·50	44·57	— 1·93
	24	19	49	2·8	II	18 5 25·78	25·55	— 0·23	S	110 30 52·27	59·92	+ 7·65
	25	20	38	31·5	II	18 58 59·40	59·05	— 0·35	—	——	—	—
	26	21	27	8·9	II	19 51 42·06	41·50	— 0·56	—	——	—	—
Mar.	12	7	35	43·2	I	6 55 23·90	24·95	+ 1·05	N	69 3 54·17	56·78	+ 2·61
	13	8	35	7·6	I	7 58 54·31	55·67	+ 1·36	N	69 58 26·57	24·61	— 1·96
	23	17	42	49·8	II	17 45 17·93	17·99	+ 0·06	S	110 19 20·61	19·52	— 1·09
	24	18	33	31·7	II	18 40 4·60	4·70	+ 0·10	N	111 1 16·28	21·86	+ 5·58
	25	19	23	5·1	II	19 33 43·83	43·61	— 0·22	N	110 38 47·48	49·72	+ 2·24
April	7	4	33	3·7	I	5 34 41·99	42·84	+ 0·85	—	——	—	—
	8	5	28	43·7	I	6 34 28·75	29·46	+ 0·71	—	——	—	—
	9	6	25	58·7	I	7 35 50·39	51·47	+ 1·08	N	69 14 48·00	43·59	— 4·41
	10	7	23	43·6	I	8 37 40·90	42·22	+ 1·32	N	71 1 61·74	58·61	— 3·13
	11	8	20	54·9	I	9 38 57·81	59·16	+ 1·35	N	74 8 16·29	13·81	— 2·48
	21	17	15	41·0	II	19 12 24·87	25·43	+ 0·56	N	111 10 44·38	47·68	+ 3·30
	22	18	5	18·8	II	20 6 8·03	8·36	+ 0·33	N	110 10 1·94	2·87	+ 0·93
	23	18	52	57·6	II	20 57 52·69	52·65	— 0·04	N	108 12 15·00	8·92	— 6·08
May	8	6	15	25·2	I	9 19 33·18	34·62	+ 1·44	—	——	—	—
	15	12	24	6·8	I·II	15 55 44·16	44·92	+ 0·76	N	105 59 26·40	28·25	+ 1·85
	16	13	18	42·3	II	16 53 18·38	18·95	+ 0·57	N	109 1 6·71	7·80	+ 1·09
	18	15	5	10·3	II	18 47 58·49	59·22	+ 0·73	N	111 30 7·08	7·60	+ 0·52
	19	15	56	35·1	II	19 43 29·03	29·16	+ 0·13	N	110 57 28·21	31·11	+ 2·90
	20	16	45	54·7	II	20 36 54·19	54·25	+ 0·06	N	109 21 44·36	49·21	+ 4·85
June	12	11	6	1·1	I	16 28 54·25	55·11	+ 0·86	N	107 52 25·77	31·62	+ 5·85
	15	13	46	54·7	II	19 19 54·07	54·42	+ 0·35	N	111 26 30·89	32·48	+ 1·59
	24	20	31	8·0	II	2 40 44·74	45·08	+ 0·34	N	79 41 9·65	11·57	+ 1·92

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE MOON'S CENTRE, *(Continued.)*

Mean Solar Time of Observation.					I or II Limb	A. R. from Observation.	A. R. from N. A.	Error of N. A.	N or S Limb.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1851.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s*	*s.*		° ′ ″	″	″
July	8	8	9	44·9	I	15 14 39·08	39·65	+ 0·57	N	103 1 17·47	21·44	+ 3·97
	9	9	0	33·7	I	16 9 33·36	34·16	+ 0·80	N	106 44 50·29	53·08	+ 2·79
	10	9	52	21·5	I	17 5 26·67	26·99	+ 0·32	—	—	—	—
Aug.	8	9	32	24·9	I	18 39 46·50	46·74	+ 0·24	N	111 34 39·37	42·32	+ 2·95
	11	12	1	48·5	I·II	21 20 19·38	19·92	+ 0·54	N	107 30 4·05	9·55	+ 5·50
Sept.	3	6	37	3·2	I	17 26 27·22	28·33	+ 1·11	—	—	—	—
	5	8	20	19·5	I	19 17 52·51	52·44	— 0·07	—	—	—	—
	6	9	10	9·6	I	20 11 46·34	46·45	+ 0·11	S	110 28 22·96	16·81	— 6·15
	18	18	17	21·6	II	6 5 36·14	37·47	+ 1·33	—	—	—	—
	19	19	13	50·1	II	7 6 8·99	10·37	+ 1·38	—	—	—	—
	21	21	10	52·7	II	9 11 23 48	24·87	+ 1·39	N	71 54 9·12	12·47	+ 3·35
	30	4	29	23·1	I	17 4 54·30	55·76	+ 1·46	—	—	—	—
Oct.	1	5	23	2·0	I	18 2 38·30	39·27	+ 0·97	S	111 29 51·10	50·88	— 0·22
	2	6	15	39·3	I	18 59 19·65	20·26	+ 0·61	—	—	—	—
	3	7	6	37·0	I	19 54 20·59	21·02	+ 0·43	S	111 8 42·51	40·77	— 1·74
	4	7	55	28·3	I	20 47 15·69	16·02	+ 0·33	—	—	—	—
	30	4	59	13·7	I	19 33 5·62	6·18	+ 0·56	—	—	—	—
	31	5	50	1·0	I	20 27 55·99	56·79	+ 0·80	S	110 23 18·72	20·02	+ 1·30
Nov.	28	4	30	32·5	I	20 58 37·15	38·10	+ 0·95	S	—	—	—
Dec.	1	6	45	32·8	I	23 25 45·98	46·14	+ 0·16	S	98 36 54·24	55·92	+ 1·68
	2	7	27	5·0	I	0 11 20·93	21·72	+ 0·79	—	—	—	—
	3	8	8	17·6	I	0 56 36·96	37·69	+ 0·73	S	89 32 21·32	13·90	— 7·42
	4	8	50	4·6	I	1 42 27·61	28·52	+ 0·91	S	84 52 19·86	14·06	— 4·90
	6	10	18	50·2	I	3 19 23·71	24·68	+ 0·97	S	76 7 40·38	32·63	— 7·75
	16	19	14	27·9	II	12 53 47·71	49·19	+ 1·48	S	90 5 50·69	59·32	+ 8·63
	30	6	3	21·8	I	0 37 47·18	47·34	+ 0·16	—	—	—	—
1852.												
Jan.	2	8	10	22·1	I	2 57 0·34	0·96	+ 0·62	S	78 1 10·07	2·84	— 7·23
	6	11	37	20·2	I	6 40 25·94	27·75	+ 1·81	N	67 35 42·56	42·54	— 0·02
	8	13	36	44·9	II	8 45 45·53	46·56	+ 1·03	N	69 59 3·88	17·19	+ 13·31
	15	19	43	44·0	II	15 21 24·17	24·93	+ 0·76	—	—	—	—
	16	20	36	16·3	II	16 18 0·61	1·13	+ 0·52	—	—	—	—
	28	5	20	47·7	I	1 49 26·38	26·82	+ 0·44	—	—	—	—
	30	6	47	34·9	I	3 24 23·71	24·47	+ 0·76	—	—	—	—
	31	7	35	0·3	I	4 15 55·67	56·44	+ 0·77	—	—	—	—
Feb.	2	9	20	34·0	I	6 9 43·96	44·72	+ 0·76	N	67 54 14·51	10·50	— 4·01
	3	10	18	7·6	I	7 11 24·80	25·95	+ 1·15	N	67 36 48·59	47·23	— 1·36
	4	11	17	17·8	I	8 14 41·73	43·51	+ 1·78	—	—	—	—
	13	19	26	17·8	II	16 58 15·06	15·59	+ 0·53	—	—	—	—
	27	5	27	3·0	I	3 54 3·24	3·50	+ 0·26	S	73 26 57·45	51·87	— 5·58
Mar.	2	8	58	39·2	I	7 42 6·10	7·30	+ 1·20	N	67 54 13·52	13·99	+ 0·47
	3	9	57	4·3	I	8 44 37·61	38·74	+ 1·13	N	69 52 38·58	40·19	+ 1·61
	4	10	55	22·4	I	9 47 1·25	2·59	+ 1·34	N	73 18 41·19	43·01	+ 1·82
	28	5	51	24·3	I	6 16 48·91	49·72	+ 0·81	—	—	—	—
	30	7	41	58·8	I	8 15 35·81	37·12	+ 1·31	N	68 33 32·29	26·91	— 5·38
	31	8	38	34·1	I	9 16 16·62	17·75	+ 1·13	N	71 15 45·82	39·93	— 5·89
April	1	9	34	48·5	I	10 16 36·63	37·75	+ 1·12	N	75 17 28·31	25·85	— 2·46
	2	10	30	17·1	I	11 16 10·37	11·29	+ 0·92	N	80 24 36·00	37·22	+ 1.22

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE MOON'S CENTRE, *(Continued.)*

Mean Solar Time of Observation.					I or II Limb.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	N or S Limb.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1852.	d.	h.	m.	s.		h. m. s.	s.	s.		° ′ ″	″	″
April	26	5	34	19·0	I	7 54 1·27	2·46	+ 1·19	N	67 40 40·76	37·69	— 3·07
	27	6	29	6·0	I	8 52 53·80	54·88	+ 1·08	—	——	—	—
	28	7	23	31·8	I	9 51 24·81	25·73	+ 0·92	N	73 13 13·23	10·21	— 3·02
	29	8	17	14·5	I	10 49 12·44	13·62	+ 1·18	—	——	—	—
	30	9	10	21·5	I	11 46 24·22	25·65	+ 1·43	N	83 11 51·31	51·84	+ 0·53
May	25	5	18	44·2	I	9 32 43·38	44·22	+ 0·84	—	——	—	—
	26	6	11	21·4	I	10 29 25·03	26·04	+ 1·01	—	——	—	—
	27	7	2	54·8	I	11 25 2·90	3·93	+ 1·03	N	80 54 8·56	10·74	+ 2·18
	29	8	45	15·6	I	13 15 33·90	34·25	+ 0·35	N	92 27 39·96	45·91	+ 5·95
	31	10	32	16·9	I	15 10 47·42	47·65	+ 0·23	N	103 41 56·22	61·75	+ 5·53
June	11	19	54	4·8	II	1 15 23·35	23·99	+ 0·64	N	87 36 6·75	0·91	— 5·84
	28	9	16	47·1	I	15 45 28·69	29·39	+ 0·70	N	106 22 27·26	25·64	— 1·62
July	26	8	5	28·8	I	16 24 21·27	23·01	+ 1·74	—	——	—	—
Aug.	24	7	53	16·7	I	18 6 29·51	30·55	+ 1·04	N	112 59 33·41	32·62	— 0·79
	25	8	49	35·0	I	19 6 53·47	54·17	+ 0·70	S	113 20 38·02	51·70	+13·68
	26	9	44	32·2	I	20 5 54·32	55·04	+ 0·72	S	112 17 20·63	32·04	+11·41
	27	10	37	2·3	I	21 2 28·34	29·29	+ 0·95	S	109 59 1·19	11·64	+10·45
	28	11	26	34·5	I	21 56 3·39	4·45	+ 1·06	S	106 40 9·61	5·65	— 3·96
Sept.	21	6	45	28·5	I	18 48 53·75	54·62	+ 0·87	—	——	—	—
	22	7	40	51·9	I	19 48 20·83	20·30	— 0·53	S	112 56 31·22	31·46	+ 0·24
	23	8	33	42·4	I	20 45 15·33	15·69	+ 0·36	S	110 58 39·41	40·27	+ 0·86
	24	9	23	44·1	I	21 39 9·95	10·76	+ 0·81	S	107 56 40·63	40·45	— 0·18
	25	10	10	26·9	I	22 30 5·13	5·65	+ 0·52	S	104 5 44·73	38·62	— 6·11
Oct.	22	8	9	6·6	I	22 14 52·90	53·28	+ 0·38	—	——	—	—
	23	8	53	52·7	I	23 3 41·22	41·92	+ 0·70	S	101 14 49·32	48·24	— 1·08
	25	10	17	35·8	I	0 35 29·40	30·34	+ 0·94	S	91 38 30·04	23·97	— 6·07
	26	10	58	14·6	I	1 20 11·81	12·42	+ 0·61	S	86 41 49·15	43·35	— 5·80
Nov.	8	21	36	21·5	II	12 49 13·17	13·60	+ 0·43	—	——	—	—
	19	6	51	53·7	I	22 47 50·11	50·79	+ 0·68	—	——	—	—
	20	7	35	21·4	I	23 35 20·13	20·69	+ 0·56	S	98 17 15·36	12·83	— 2·53
	22	8	57	27·9	I	1 5 31·52	32·05	+ 0·53	S	88 25 43·39	39·44	— 3·95
	23	9	38	3·6	I	1 50 10·65	10·58	— 0·07	S	83 32 14·59	10·56	— 4·03
	24	10	19	30·3	I	2 35 41·65	42·38	+ 0·73	S	78 53 13·87	9·85	— 4·02
Dec.	20	7	35	43·0	I	1 33 57·25	57·95	+ 0·70	S	85 21 19·61	12·54	— 7·07
	21	8	16	42·6	I	2 19 0·95	1·69	+ 0·74	S	80 35 27·21	17·17	—10·04
	23	9	43	27·2	I	3 53 55·15	55·78	+ 0·63	S	72 17 59·99	53·63	— 6·36
	24	10	30	27·7	I	4 45 1·34	1·99	+ 0·65	S	69 9 28·70	19·24	— 9·46

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF MERCURY.

Mean Solar Time of Observation.					Point observed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1848.	d.	h.	m.	s.		h. m. s.	s.	s.		° ′ ″	″	″
Jan.	3	23	1	23·9	C	17 53 17·23	17·18	— 0·05	C	113 50 23·80	25·88	+ 2·08
	5	23	6	42·1	"	18 6 29·27	28·89	— 0·38	"	114 4 3·00	8·81	+ 5·81
	7	23	12	9·9	"	18 19 51·18	51·03	— 0·15	"	114 12 45·51	49·33	+ 3·82
	9	23	17	47·3	"	18 33 22·69	22·31	— 0·38	"	114 16 22·75	26·37	+ 3·62
	11	23	23	32·4	"	18 47 2·16	1·72	— 0·44	"	114 14 41·91	45·86	+ 3·95
	12	23	26	28·0	"	18 53 54·86	54·08	— 0·78	"	114 11 51·84	53·43	+ 1·59
	16	23	38	24·6	"	19 21 39·54	38·82	— 0·72	"	113 46 23·77	27·89	+ 4·12
	18	23	44	30·1	"	19 35 39·49	38·74	— 0·75	"	113 25 2·73	4·14	+ 1·41
Feb.	22	1	17	45·7	"	23 23 13·23	12·76	— 0·47	"	93 17 23·94	20·75	— 3·19
	23	1	18	21.8	"	23 27 45·88	45·51	— 0·37	"	92 32 50·03	44·95	— 5·08
	24	1	18	35·4	"	23 31 56·14	55·80	— 0·34	"	91 50 12·16	8·16	— 4·00
	25	1	18	24·3	1 L	23 35 41·81	41·31	— 0·50	"	91 9 57·16	53·44	— 3·72
	28	1	15	7·3	C	23 44 13·53	12·96	— 0·57	"	89 27 3·11	0·27	— 2·84
April	27	22	41	34·2	"	1 6 48·10	48·12	+ 0·02	"	85 38 9·07	11·06	+ 1·99
	28	22	43	40·5	"	1 12 51·29	51·26	— 0·03	"	84 56 49·67	51·13	+ 1·46
	30	22	48	14·5	"	1 25 18·94	19·30	+ 0·36	"	83 31 38·63	39·30	+ 0·67
May	5	23	1	54·9	"	1 58 44·41	44·42	+ 0·01	"	79 46 34·62	32·96	— 1·66
Sept.	14	0	34	12·9	"	12 7 46·39	46·42	+ 0·03	"	90 1 22·35	22·67	+ 0·32
Oct.	11	1	13	38·2	"	14 33 45·37	44·78	— 0·59	"	107 35 25·26	26·94	+ 1·68
	19	1	16	54·1	"	15 8 34·12	33·34	— 0·78	"	110 42 35·21	37·63	+ 2·42
	23	1	14	29·1	1 L	15 21 55·21	54·44	— 0·77	"	111 39 19·32	19·68	+ 0·36
1849.												
Jan.	19	0	41	47·6	C	20 36 5·19	4·44	— 0·75	C	110 44 50·00	52·21	+ 2·21
	22	0	51	4·4	"	20 57 12·86	12·21	— 0·65	"	109 15 27·21	28·64	+ 1·43
	24	0	57	1·4	"	21 11 4·20	3·93	— 0·27	"	108 8 20 08	23·26	+ 3·18
	25	0	59	54·6	"	21 17 54·49	54·18	— 0·31	"	107 32 41·40	43·40	+ 2·00
	29	1	10	32·8	"	21 44 20·54	20·09	— 0·45	"	104 57 42·95	42·56	— 0·39
	30	1	12	53·7	"	21 50 38·38	38·23	— 0·15	"	104 16 25·98	24·93	— 1·05
Feb.	1	1	17	4·3	"	22 2 42·73	43·17	+ 0·44	"	102 51 54·65	52·77	— 1·88
	3	1	20	24·3	"	22 13 55·85	55·95	+ 0·10	"	101 26 12·43	11·47	— 0·96
	7	1	23	23·1	"	22 32 42·06	41·66	— 0·40	"	98 40 38·08	34·67	— 3·41
	10	1	21	13·3	"	22 42 21·67	20·69	— 0·98	"	96 53 5·00	7·25	+ 2·25
	12	1	17	6·2	"	22 46 6·92	6·21	— 0·71	"	95 55 34·49	32·18	— 2·31
Mar.	12	22	35	8·9	"	21 58 2·25	1·47	— 0·78	"	101 49 53·25	58·65	+ 5·40
April	24	23	23	23·1	"	1 35 56·03	55·86	— 0·17	"	81 33 29·28	26·97	— 2·31
	25	23	26	48·4	"	1 43 18·96	18·56	— 0·40	"	80 42 22·02	19·95	— 2·07
May	16	0	54	27·6	"	4 30 3·46	3·88	+ 0·42	"	66 17 57·89	56·34	— 1·55
	19	1	6	51·6	"	4 54 19·54	19·83	+ 0·29	"	65 17 48·33	47·71	— 0·62
Sept.	29	1	22	9·1	"	13 54 1·01	0·80	— 0·21	"	——	—	—
Nov.	1	22	46	53·5	2 L	13 32 22·74	22·14	— 0·60	"	97 54 47·32	41·27	— 6·05
	14	22	36	28·4	C	14 13 11·40	11·23	— 0·17	"	101 10 42·02	41·02	— 1·00
	21	22	47	48·5	"	14 52 9·36	9·22	— 0·14	"	104 58 57·78	56·43	— 1·35
	28	23	2	49·7	"	15 34 48·85	48·39	— 0·46	"	——	—	—
	29	23	5	10·7	"	15 41 6·74	5·81	— 0·93	"	109 5 20·95	24·49	+ 3·54

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF MERCURY, *(Continued.)*

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1849.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Dec.	4	23	17	29·3	C	16 13 10·17	9·96	— 0·21	—	——	—	—
	10	23	33	32·0	„	16 52 55·24	54·85	— 0·39	C	113 16 64·84	52·38	— 12·46
1850.												
Jan.	3	0	44	9·8	C	19 34 25·17	24·90	— 0·27	„	113 50 57·45	61·65	+ 4·20
	5	0	50	25·2	„	19 48 34·72	34·64	— 0·08	„	113 16 19·76	21·03	+ 1·27
	19	1	24	45·9	1 L	21 18 12·98	13·10	+ 0·12	—	——	—	—
	28	1	17	25·8	„	21 46 20·77	19·82	— 0·95	„	101 59 21·65	20·60	— 1·05
	29	1	13	40·2	„	21 46 30·93	30·17	— 0·76	„	101 39 58·68	57·98	— 0·70
	30	1	9	12·4	„	21 45 59·17	58·19	— 0·98	„	101 24 20·10	18·75	— 1·35
Feb.	15	23	4	31·9	2 L	20 47 58·77	57·33	— 1·44	—	——	—	—
	17	22	54	22·5	„	20 45 40·90	40·08	— 0·82	„	105 21 54·28	57·50	+ 3·22
	18	22	50	3·8	„	20 45 17·77	16·44	— 1·33	„	105 36 27·94	30·84	+ 2·90
	19	22	46	12·3	„	20 45 22 53	21·33	— 1·20	„	105 49 24·45	29·87	+ 5·42
	22	22	37	15·7	„	20 48 13·87	12·71	— 1·16	„	106 18 27·07	32·15	+ 5·08
	25	22	31	39·7	„	20 54 26·43	25·67	— 0·76	„	106 32 41·97	44·46	+ 2·49
	27	22	29	26·5	„	21 0 6·61	5·83	— 0·78	„	106 33 59·16	65·58	+ 6·42
Mar.	5	22	28	15·9	„	21 22 34·92	34·28	— 0·64	„	106 0 39·15	44·54	+ 5·39
	6	22	28	40·9	„	21 26 56·79	56·26	— 0·53	„	105 49 48·69	53·44	+ 4·75
	19	22	43	57·4	C	22 33 30·56	30·39	— 0·17	„	101 22 20·14	26·48	+ 6·34
	20	22	45	41·0	„	22 39 11·11	10·48	— 0·63	„	100 52 30·92	36·52	+ 5·60
	21	22	47	26·6	„	22 44 54·04	54·18	+ 0·14	„	100 21 24·42	31·13	+ 6·71
	22	22	49	18·2	„	22 50 42·02	41·52	— 0·50	„	99 49 4·86	10·80	+ 5·94
	25	22	55	10·1	„	23 8 25·02	24·60	— 0·42	„	98 4 43·27	49·58	+ 6·31
April	3	23	16	5·2	„	0 4 51·91	51·56	— 0·35	„	91 48 57·05	59·63	+ 2·58
	4	23	18	44·5	„	0 11 28·51	28·27	— 0·24	„	91 1 45·53	49·16	+ 3·63
May	7	1	13	42·5	I L	4 12 55·26	55·72	+ 0.46	„	66 28 2·72	0·16	— 2·56
	8	1	16	18·4	„	4 19 28·42	28·59	+ 0·17	„	66 8 34·76	32·13	— 2·63
	9	1	18	40·6	„	4 25 47·47	47·72	+ 0·25	„	65 51 29·24	26·77	— 2·47
	10	1	20	48·6	„	4 31 52·17	52·37	+ 0·20	„	65 36 42 85	40·80	— 2·05
	11	1	22	41·2	„	4 37 41·97	42·04	+ 0·07	„	65 24 11·41	9·86	— 1·55
	13	1	25	39·6	„	4 48 34·15	33·99	— 0·16	„	65 5 37·28	36·15	— 1·13
	18	1	28	7·5	„	5 10 44·74	44·39	— 0·35	„	64 53 11·51	9·75	— 1·76
July	1	22	32	57·7	II L	5 12 30·65	30·43	— 0·22	„	70 21 37·49	39·76	+ 2·27
	7	22	35	7·7	„	5 38 20·45	20·62	+ 0·17	„	68 48 14·18	15·51	+ 1·33
	10	22	40	35·5	„	5 55 38·81	39·10	+ 0·29	„	68 3 16·49	16·19	— 0·30
	18	23	8	6·5	C	6 54 46·55	47·15	+ 0·60	„	66 56 31·26	28·03	— 3·23
Aug.	9	0	43	10·6	„	9 52 54·66	54·81	+ 0·15	—	——	—	—
	13	0	55	27 0	„	10 20 58·86	59·84	+ 0·98	„	78 13 58·88	62·30	+ 3·42
	23	1	17	6·9	„	11 22 7·80	7·88	+ 0·08	„	85 35 28·89	33·79	+ 4·90
	24	1	18	40·6	„	11 27 38·26	38·42	+ 0·16	„	86 19 10·01	15·04	+ 5·03
Oct.	21	22	39	44·7	2 L	12 40 53·10	52·96	— 0·14	„	92 26 14·59	11·53	— 3·06
	28	22	41	49·8	„	13 10 34·28	34·48	+ 0·20	„	95 11 42·20	42·34	+ 0·14
Nov.	3	22	51	28·2	„	13 43 53·56	53·14	— 0·42	„	98 48 14·07	14·73	+ 0·66
	13	23	12	37·4	„	14 44 31·69	31·28	— 0·41	„	105 3 17·25	17·94	+ 0·69
	19	23	26	42 8	„	15 22 18·80	19·15	+ 0·35	„	108 22 26·31	30·36	+ 4·05
Dec.	12	0	27	2·5	C	17 49 32·75	32·70	— 0·05	„	115 20 36·59	41·75	+ 5·16
	13	0	30	4·2	„	17 56 31·45	31·43	— 0·02	„	115 25 5·74	13·13	+ 7·39
	14	0	33	6·9	„	18 3 31·04	30·89	— 0·15	„	115 28 13·00	16·52	+ 3·52

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF MERCURY, *(Continued)*

Mean Solar Time of Observation.					Point observed	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1850.	d.	h.	m.	s.		h. m. s.	s.	s.		° ′ ″	″	″
Dec.	16	0	39	12·5	C	18 17 31·06	30·90	— 0·16	C	115 29 56·90	61·33	+ 4·43
	17	0	42	15·5	»	18 24 30·97	30·94	— 0·03	»	115 28 33·70	38·56	+ 4·86
	18	0	45	18·2	»	18 31 30·80	30·65	— 0·15	»	115 25 40·51	44·66	+ 4·15
	19	0	48	19·7	»	18 38 29·49	29·63	+ 0·14	»	115 21 14·30	18·82	+ 4·52
	20	0	51	20·8	»	18 45 27·72	27·56	— 0·16	»	115 15 17·61	20·46	+ 2·85
	21	0	54	20·6	»	18 52 24·07	23·96	— 0·11	»	115 7 46·24	48·82	+ 2·58
	23	1	0	12·8	»	19 6 10·40	10·23	— 0·17	»	114 48 4·09	7·02	+ 2·93
	24	1	3	4·3	»	19 12 59·05	58·96	— 0·09	»	114 35 54·61	56·60	+ 1·99
1851.												
Jan.	2*	1	23	59·4	C	20 9 26·68	26·32	— 0·36	»	111 42 14·51	13·35	— 1·16
	3	1	25	22·8	»	20 14 46·88	46·33	— 0·55	»	111 17 6.87	7·52	+ 0·66
	4	1	26	27·5	»	20 19 48·33	48·63	+ 0·30	»	110 51 19·93	20·64	+ 0·71
	7	1	27	29·7	1 L	20 32 40·54	39·83	— 0·71	»	109 32 10·12	9·60	— 0·52
	8	1	26	55·6	»	20 36 3·29	2·45	— 0·84	»	109 6 4·34	3·00	— 1·34
	9	1	25	49·9	»	20 38 53·32	52·44	— 0·88	»	108 40 39·35	36·87	— 2·48
	10	1	24	7·2	»	20 41 7·69	6·55	— 1·14	»	108 16 15·35	13·17	— 2·18
	14	1	10	22·8	»	20 43 7·13	5·56	— 1·57	»	106 56 24·51	21·97	— 2·54
	16	0	58	56·0	»	20 39 31·41	29·91	— 1·50	—	——	—	—
	30	22	59	20·4	2 L	19 38 43·71	42·09	— 1·62	—	——	—	—
Feb.	7	22	32	24·4	»	19 43 16·30	15·38	— 0·92	—	——	—	—
	11	22	28	34·3	»	19 55 12·03	11·30	— 0·73	»	109 52 14·73	17·49	+ 2·76
	14	22	28	25·3	»	20 6 52·58	51·80	— 0·78	»	109 51 28·01	32·32	+ 4·31
	17	22	29	59·3	»	20 20 16·46	15·78	— 0·68	»	109 39 36·79	41·01	+ 4·22
	20	22	32	52·0	»	20 34 59·18	58·80	— 0·38	»	109 16 19·15	23·87	+ 4·72
	21	22	34	3·6	»	20 40 7·72	7·39	— 0·33	»	109 5 58·35	63·63	+ 5·28
	24	22	38	14·	—	——	—	—	—	108 27 9·84	15·06	+ 5·22
	25	22	39	48·1	»	21 1 39·28	38·93	— 0·35	»	108 11 37·44	42·52	+ 5·08
	26	22	41	26·0	C	21 7 14·25	13·90	— 0·35	»	107 54 45·26	51·59	+ 6·33
	27	22	43	8·2	»	21 12 53·29	53·01	— 0·28	»	107 36 38·82	42·52	+ 3·70
Mar.	4	22	52	32·7	2 L	21 42 1·43	1·39	— 0·04	»	105 46 20·87	24·99	+ 4·12
	9	23	3	8·6	C	22 12 22·04	21·95	— 0·09	—	——	—	—
	10	23	5	23·1	»	22 18 33·54	33·58	+ 0·04	—	——	—	—
	11	23	7	41·3	»	22 24 48·38	47·61	— 0·77	—	——	—	—
	12	23	9	59·9	»	22 31 4·36	4·04	— 0·32	—	——	—	—
	13	23	12	22·3	»	22 37 23·49	22·94	— 0·55	—	——	—	—
	14	23	14	46·0	»	22 43 44·43	44·30	— 0·13	»	100 29 13·31	17·47	+ 4·16
	16	23	19	42·7	»	22 56 34·80	34·61	— 0·19	»	99 10 42·12	44·68	+ 2·56
	17	23	22	14·8	»	23 3 3·95	3·67	— 0·28	—	——	—	—
	19	23	27	27·5	»	23 16 10·63	10·18	— 0·45	»	97 3 43·33	45·77	+ 2·44
	20	23	30	7·6	»	23 22 47·74	48·09	+ 0·35	—	——	—	—
	21	23	32	51·9	»	23 29 28·86	28·52	— 0·34	—	——	—	—
June	15	22	25	15·0	2 L	4 0 44·35	44·80	+ 0·45	—	——	—	—
Aug.	11	1	33	36·4	C	10 50 24·11	24·23	+ 0·12	—	——	—	—
	15	1	37	55·1	»	11 10 29·81	29·69	— 0·12	»	85 8 28·65	36·63	+ 7·98
Sept.	1	1	32	21·0	1 L	12 11 56·20	55·86	— 0·34	»	94 40 14·55	15·13	+ 0·58
	10	1	5	16·2	»	12 20 16·07	15·45	— 0·62	»	96 37 20·64	24·20	+ 3·56
Oct.	2	22	49	29·7	2 L	11 34 47·45	47·22	— 0·23	—	——	—	—
Nov.	21	0	16	39·6	C	16 15 22·72	23·14	+ 0·42	»	112 38 27·28	32·07	+ 4·79
	22	0	19	16·8	»	16 21 56·83	56·93	+ 0·10	»	112 59 40·56	44·69	+ 4·13
	24	0	24	34·7	»	16 35 8·66	8·69	+ 0·03	»	113 38 34·21	39·79	+ 5·58

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF MERCURY, (*Continued.*)

Mean Solar Time of Observation					Point observed	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1851.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Nov.	25	0	27	15·5	C	16 41 46·61	46·48	— 0·13	C	113 56 16·17	19·63	+ 3·46
	27	0	32	40·4	,,	16 55 5·62	5·46	— 0·16	,,	114 27 53·98	56·16	+ 2·18
	28	0	35	24·3	,,	17 1 46·47	46·41	— 0·06	,,	114 41 45·49	49·89	+ 4·40
	29	0	38	9·1	,,	17 8 28·38	28·13	— 0·25	,,	114 54 22·98	25·32	+ 2·34
Dec.	1	0	43	39·5	,,	17 21 53·47	53·02	— 0·45	,,	115 15 31·32	35·88	+ 4·56
	2	0	46	25·1	,,	17 28 35·96	35·69	— 0·27	,,	115 24 1·63	8·05	+ 6·42
	3	0	49	10 5	,,	17 35 18·44	18·17	— 0·27	—	——	—	—
	5	0	54	39·5	1 L	17 48 41·46	41·06	— 0·40	,,	115 41 13·07	17·22	+ 4·15
	8	1	2	41·1	,,	18 8 34·33	33·56	— 0·77	,,	115 45 18·63	22·23	+ 3·60
	9	1	5	16·3	,,	18 15 6·04	5·65	— 0·39	,,	115 43 43·44	47·83	+ 4·39
	10	1	7	47·3	,,	18 21 34·34	33·91	— 0·43	,,	115 40 39·96	43·22	+ 3·26
	11	1	10	14·0	,,	18 27 57·98	57·51	— 0·47	,,	115 36 6·80	9·45	+ 2·65
	17	1	22	13·1	,,	19 3 38·59	37·98	— 0·61	,,	114 38 42·73	42·09	— 0·64
1852.												
Jan.	19	22	34	59·5	11 L	18 29 59·59	58·42	— 1·17	—	——	—	—
Feb.	29	23	30	29·4	,,	22 7 17·70	17·30	— 0·40	,,	103 52 57·73	62·79	+ 5·06
Mar.	1	23	33	10·2	,,	22 13 55·04	55·17	+ 0·13	,,	103 16 36·35	38·77	+ 2·42
	2	23	35	53·3	,,	22 20 35·11	34·65	— 0·46	,,	102 38 54·17	56·94	+ 2·77
	3	23	38	37·3	,,	22 27 16·19	15·66	— 0·53	—	——	—	—
	29	0	54	42·3	1 L	1 22 7·58	7·67	+ 0·09	,,	80 26 50·82	47·55	— 3·27
	30	0	57	23·6	,,	1 28 45·94	45·83	— 0·11	,,	79 34 55·12	53·50	— 1·62
	31	0	59	55·1	,,	1 35 14·16	14·33	+ 0·17	,,	78 44 43·02	41·43	— 1·59
April	1	1	2	15·3	,,	1 41 31·57	31·80	+ 0 23	,,	77 56 29·23	24·20	— 5·03
	2	1	4	23·8	,,	1 47 37·02	36·86	— 0·16	,,	77 10 17·54	13·74	— 3·80
	3	1	6	18·2	,,	1 53 28·05	28·24	+ 0·19	,,	76 26 25·40	20·79	— 4·61
	7	1	11	15·9	,,	2 14 12·87	12·96	+ 0·09	,,	73 56 38·47	32·56	— 5·91
	8	1	11	44·7	,,	2 18 38·22	38·25	+ 0·03	,,	73 26 8·64	5·43	— 3·21
	13	1	8	56·3	,,	2 35 31·90	31·57	— 0·33	,,	71 38 44·83	43·10	— 1·73
	14	1	7	15·9	,,	2 37 48·58	47·42	— 1·16	,,	71 26 30·45	28·09	— 2·36
	15	1	5	12·6	,,	2 39 41·55	40·46	— 1·09	—	——	—	—
	16	1	2	46·6	,,	2 41 11·19	10·33	— 0·86	,,	71 11 26·35	22·48	— 3·87
	17	0	59	56·6	,,	2 42 17·64	17·20	— 0·44	—	——	—	—
July	10	0	59	41·9	C	8 13 13·02	13·87	+ 0·85	,,	68 10 52·88	54·24	+ 1·36
	12	1	7	38·1	,,	8 29 3·67	4·40	+ 0·73	,,	69 6 33·45	30·94	— 2·51
	15	1	18	8·4	,,	8 51 25·25	26·01	+ 0·76	,,	70 39 34·07	36·67	+ 2·60
Sept.	19	22	48	37·3	11 L	10 45 38·96	38·77	— 0·19	,,	81 15 50·79	45·04	— 5·75
	21	22	49	19·8	,,	10 54 14·84	14·85	+ 0·01	,,	81 43 32·96	31·65	— 1·31
	26	22	56	35·2	,,	11 21 14·21	14·70	+ 0·49	,,	83 54 20·53	19·58	— 0·95
	27	22	58	40·5	,,	11 27 15·66	15·76	+ 0·10	,,	84 28 48·90	47·03	— 1·87
Oct.	3	23	12	51·8	,,	12 5 8·79	9·09	+ 0·30	,,	88 31 8·00	8·65	+ 0·65
Nov.	2	0	18	59·4	C	15 5 47·69	47·98	+ 0·29	,,	108 22 16·75	21·96	+ 5·21
	22	1	4	57·1	,,	17 10 44·09	44·01	— 0·08	,,	115 23 32·96	36·23	+ 3·27
	25	1	11	9·6	,,	17 28 47·60	47·84	+ 0·24	,,	115 43 32·92	37·74	+ 4·82

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF VENUS.

Mean Solar Time of Observation.					Point observed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1848.	d.	h.	m.	s.		h m. s.	s.	s.		° ′ ″	″	″
Jan.	3	20	51	26·4	2 L	15 42 57·74	57·15	— 0·59	C	106 44 36·97	36·97	0·00
	4	20	52	3·6	”	15 47 31·47	30·70	— 0·77	”	107 0 33·09	32·13	— 0·96
	5	20	52	42·2	”	15 52 6·62	5·78	— 0·84	”	107 16 10·63	9·88	— 0·75
	10	20	56	15·9	”	16 15 24·22	23·41	— 0·81	”	108 29 24·74	25·39	+ 0·65
	12	20	57	51·4	”	16 24 53·35	52·45	— 0·90	”	108 56 12·09	10·82	— 1·27
	21	21	6	6·2	”	17 8 38·59	37·40	— 1·19	”	110 35 13·09	5·56	— 7·53
	23	21	8	9·1	”	17 18 34·74	33·61	— 1·13	”	110 51 55·01	58·16	+ 3·15
	26	21	11	20·7	”	17 33 36 24	35·43	— 0·81	”	111 12 59·56	64·02	+ 4·46
	27	21	12	26·1	”	17 38 38·77	37·85	— 0·92	”	111 18 55·96	60·42	+ 4·46
	28	21	13	32·5	”	17 43 41·81	41·08	— 0·73	”	111 24 17·87	23·27	+ 5·40
	31	21	16	56·5	”	17 58 56·09	55·18	— 0 91	”	111 37 0·53	5·17	+ 4·64
Feb.	1	21	18	5·6	”	18 4 1·80	1·18	— 0·62	”	111 40 4·11	9·10	+ 4·99
	2	21	19	15·5	”	18 9 8·78	7·73	— 1·05	”	111 42 32·71	37·53	+ 4·82
	4	21	21	36·9	”	18 19 23·45	22·22	— 1·23	”	111 45 42·06	46·51	+ 4·45
	7	21	25	10·9	”	18 34 47·80	46·73	— 1·07	”	111 45 51·72	56·88	+ 5·16
	21	21	41	53·4	”	19 46 44·52	43·78	— 0·74	”	110 33 20·54	28·49	+ 7·95
	22	21	43	2·5	”	19 51 50·80	50·15	— 0·65	”	110 23 39·84	43·55	+ 3·71
	23	21	44	12·0	”	19 56 56·90	55·99	— 0·91	”	110 13 16 19	23·15	+ 6·96
	27	21	48	42·7	”	20 17 14·28	13·64	— 0·64	”	109 26 6·85	12·91	+ 6·06
	28	21	49	48·6	”	20 22 17·19	16·42	— 0·77	”	109 12 53·47	49·19	— 4·28
Mar.	1	21	51	58·3	”	20 32 20·37	19·81	— 0·56	”	108 44 46·31	55·42	+ 9·11
	7	21	58	8·7	”	21 2 10·96	10·49	— 0·47	”	107 7 54·87	60·38	+ 5·51
	20	22	9	40·1	”	22 4 59·48	59·11	— 0·37	”	102 40 49·28	52·51	+ 3·23
	28	22	15	33·3	”	22 42 25·92	25·66	— 0·26	”	99 25 18·94	23·13	+ 4·19
	29	22	16	14·2	”	22 47 3·46	3·10	— 0·36	”	98 59 35·57	38·78	+ 3·21
April	19	22	28	37·4	C	0 22 16·67	16·43	— 0·24	”	89 18 42·46	42·40	— 0·06
	23	22	30	49·2	”	0 40 15·11	15·19	+ 0·08	”	87 24 11·18	11·93	+ 0·75
	27	22	33	4·5	”	0 58 16·93	16·84	— 0·09	”	85 30 13·90	12·07	— 1·83
	28	22	33	38·9	”	1 2 48·04	47·97	— 0·07	”	85 1 54·57	52·15	— 2·42
	30	22	34	48·9	”	1 11 51·17	51·37	+ 0·20	”	84 5 30·28	28·93	— 1·35
May	10	22	41	10·7	”	1 57 39·62	39·77	+ 0·15	”	79 32 15·85	12·93	— 2·92
	12	22	42	35·5	”	2 6 57·40	57·59	+ 0·19	”	78 39 59·23	57·27	— 1·96
	16	22	45	33·7	”	2 25 42·92	43·42	+ 0·50	”	76 58 39·78	34·80	— 4·98
June	21	23	24	51·5	”	5 27 2·51	2·77	+ 0·26	”	66 52 49·94	46·63	— 3·31
	25	23	30	23·2	”	5 48 21·83	22·91	+ 1·08	”	66 31 46·78	45·33	— 1·45
Aug.	23	0	37	15·3	”	10 44 5·17	5·02	— 0·15	”	80 25 39·06	40·73	+ 1·67
	24	0	37	57·2	”	10 48 43·62	43·56	— 0·06	”	80 53 54·46	54·17	— 0·29
	31	0	42	31·6	”	11 20 54·49	54·30	— 0·19	”	84 17 38·40	41·12	+ 2·72
Sept.	14	0	50	40·5	”	12 24 16·61	16·18	— 0·43	”	91 24 37·17	40·11	+ 2·94
Oct.	2	1	1	50·9	”	13 46 27·01	25·96	— 1·05	”	100 26 7·82	10·12	+ 2·30
	11	1	8	50·3	”	14 28 56·72	55·79	— 0·93	”	104 32 58·82	61·18	+ 2·36
	20	1	17	17·0	”	15 12 53·68	53·08	— 0·60	”	108 11 15·44	16·64	+ 1·20
	23	1	20	28·2	”	15 27 55·08	54·12	— 0·96	”	109 16 2·48	2·16	— 0·32
Dec.	18	2	36	18·8	1 L	20 24 45·93	45·43	— 0·50	”	111 20 29·94	28·12	— 1·82
	20	2	38	31·8	”	20 34 52·46	51·95	— 0·51	S L	110 44 41·30	38·59	— 2·71
	21	2	39	36·1	”	20 39 53·29	52·99	— 0·30	”	110 25 55·32	51·90	— 3·42
	22	2	40	38·7	”	20 44 52·68	52·58	— 0·10	”	110 6 33·32	30·62	— 2·70
	23	2	41	40·2	”	20 49 50·97	50 61	— 0·36	”	109 46 40·57	37·93	— 2·64

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF VENUS, *(Continued.)*

Mean Solar Time of Observation.					Point observed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observed	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1849.	d.	h.	m.	s.		h. m. s.	s.	s.		° ′ ″	″	″
Jan.	2	2	50	28·7	1 L	21 38 6·44	6·24	— 0·20	S L	106 0 24·57	22·42	— 2·15
	22	3	0	41·4	"	23 7 12·17	12·03	— 0 14	"	96 39 29·39	25·24	— 4·15
	23	3	0	59·	—	——	—	—	"	96 9 3·24	0·67	— 2·57
	24	3	1	14·7	"	23 15 38·41	38·55	+ 0·14	"	95 38 29·16	27·33	— 1·83
	25	3	1	29·6	"	23 19 50·09	50·15	+ 0·06	"	95 7 49·21	46·93	— 2·28
	26	3	1	43·5	"	23 24 0·57	0·71	+ 0·14	"	94 36 63·29	59·83	— 3·46
	29	3	2	19·3	"	23 36 26·01	26·17	+ 0·16	"	93 4 12·19	7 81	— 4·38
	30	3	2	29·3	"	23 40 32·47	32·69	+ 0·22	"	92 33 5·51	2·54	— 2·97
Feb.	1	3	2	46·4	"	23 48 42·72	42·81	+ 0·09	"	91 30 48·20	44·81	— 3·39
	2	3	2	52·9	"	23 52 46·15	46·47	+ 0·32	"	90 59 33·49	33·77	+ 0·28
	7	3	3	16·	—	——	—	—	"	88 23 45·42	43·47	— 1·95
	12	3	3	16·8	"	0 32 35·59	35·87	+ 0·28	"	85 49 10·32	6·96	— 3·36
	14	3	3	12·4	"	0 40 24·25	24·29	+ 0·04	"	84 47 59·86	55·74	— 4·12
	16	3	3	4·5	"	0 48 8·96	9·78	+ 0·82	C	83 47 16·80	15·10	— 1·70
	19	3	2	47·8	"	0 59 41·99	42·61	+ 0·62	S L	82 17 24·19	22·12	— 2·07
	21	3	2	33·0	"	1 7 20·57	20·86	+ 0·29	"	81 18 25·37	19·88	— 5·49
Mar.	13	2	56	39·4	"	2 20 17·02	17·90	+ 0·88	"	72 26 15·90	16·75	+ 0·85
April	14	2	12	21·9	"	3 42 1·88	4·01	+ 2·13	"	64 19 26·50	25·56	— 0·94
	16	2	6	22·0	"	3 43 55·11	56·41	+ 1·30	"	64 10 26·81	20·98	— 5·83
	17	2	3	8·7	"	3 44 37·47	39·65	+ 2·18	"	64 7 10·53	6·36	— 4·17
	25	1	31	47·7	"	3 44 44·14	46·73	+ 2·59	"	64 13 65·55	59·58	— 5·97
	26	1	27	9·3	"	3 44 1·63	3·46	+ 1·83	"	64 19 30·16	26·22	— 3·94
	28	1	17	21·6	"	3 42 4·46	7·59	+ 3·13	"	64 33 48·09	41·11	— 6·98
	30	1	6	56·7	"	3 39 31·45	33·89	+ 2·44	"	64 52 38·66	32·40	— 6·26
May	1	1	1	30·4	"	3 38 1·19	3 65	+ 2·46	"	65 3 48·07	43·78	— 4·29
	2	0	55	56·0	"	3 36 22·46	25·08	+ 2·62	"	65 16 9·16	5·93	— 3·23
	3	0	50	14·0	"	3 34 36·03	38·62	+ 2·59	"	65 29 43·81	38·38	— 4·93
	5	0	38	28·7	"	3 30 41·79	44·66	+ 2·87	"	66 0 15·50	9·83	— 5·67
	7	0	26	20·9	"	3 26 25·27	27·70	+ 2·43	"	66 35 7·40	2·56	— 4·84
	8	0	20	10·2	"	3 24 10·32	12·65	+ 2·33	"	66 53 68·80	59·13	— 9·67
	21	22	55	21·6	2 L	2 54 15·10	17·33	+ 2·23	N L	72 6 29·87	19·36	—10·51
	24	22	39	32·0	"	2 50 12·98	15·27	+ 2·29	"	73 7 18·51	9·57	— 8·94
June	6	21	46	15·3	"	2 48 3·03	4·38	+ 1·35	C	75 48 53·93	48·48	— 5·45
	11	21	31	57·8	"	2 53 26·21	27·11	+ 0·90	"	76 4 43·90	38·29	— 5·61
	12	21	29	27·6	"	2 54 52·08	53·02	+ 0·94	"	76 5 12·50	6·47	— 6·03
	24	21	6	59·7	"	3 19 39·13	39·75	+ 0·62	"	75 16 61·35	59·10	— 2·25
	25	21	5	39·4	"	3 22 15·45	16·07	+ 0·62	"	75 9 35·30	32·93	— 2·37
	26	21	4	23·6	"	3 24 56·00	56·63	+ 0·63	"	75 1 47·13	44·20	— 2·93
July	9	20	53	37·7	"	4 5 23·72	24·16	+ 0·44	"	72 58 39·20	36·14	— 3·06
	12	20	52	26·3	"	4 16 1·71	2·11	+ 0·40	"	72 27 58·33	54·35	— 3·98
	16	20	51	29·3	"	4 30 50·66	50·96	+ 0·30	"	71 47 48·19	44 75	— 3·44
	19	20	51	12·9	"	4 42 23·74	24·03	+ 0·29	"	71 18 57·31	53·52	— 3·79
Aug.	8	20	57	6·7	"	6 7 10·31	10·72	+ 0·41	"	69 8 16·74	13·99	— 2·75
	9	20	57	41·9	"	6 11 42·11	42·31	+ 0·20	"	69 5 42 05	38·93	— 3·12
	12	20	59	34·4	"	6 25 24·12	24·48	+ 0·36	"	69 0 44·78	40·83	— 3·95
	13	21	0	13·6	"	6 30 0·48	0·81	+ 0·33	"	68 59 61·99	58·55	— 3·44
	17	21	3	2·0	"	6 48 35·54	35·97	+ 0·43	"	69 2 10·17	6·79	— 3·38
	20	21	5	17·0	"	7 2 40·53	40·99	+ 0·46	"	69 9 7·84	5·06	— 2·78
	21	21	6	3·8	"	7 7 23·85	23·99	+ 0·14	"	69 12 30·26	27·30	— 2·96
	26	21	10	3·0	"	7 31 6·77	6·85	+ 0·08	"	69 37 20·37	18·48	— 1·89

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF VENUS, (*Continued.*)

Mean Solar Time of Observation.		Point observed.	A. R. from Observation	A R from N. A	Error of N. A.	Point observed.	N P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1849.	*d.* *h.* *m.* *s.*		*h.* *m.* *s.*	*s.*	*s.*		° ′ ″	″	″
Sept.	4 21 17 31·6	2 L	8 14 5·86	5·88	+ 0·02	C	70 56 3·27	1·95	— 1·32
	12 21 24 9·5	„	8 52 17·03	17·12	+ 0·09	„	72 42 3·07	4·14	+ 1·07
	19 21 29 42·0	„	9 25 26·32	26·76	+ 0·44	„	74 40 54·66	54·46	— 0·20
	20 21 30 27·6	„	9 30 8·93	9·31	+ 0·38	„	74 59 43·70	43·87	+ 0·17
	25 21 34 10·4	„	9 53 34·79	34·97	+ 0·18	„	76 40 15·79	15·92	+ 0·13
	26 21 34 53·8	„	9 58 14·52	14·67	+ 0·15	„	77 1 33·90	35·72	+ 1·82
	27 21 35 36·3	„	10 2 53·74	53·89	+ 0·15	„	77 23 18·16	18·72	+ 0·56
Oct.	12 21 45 23·1	„	11 11 51·15	51·09	— 0·06	„	83 28 47·93	53·81	+ 5·88
	14 21 46 36·4	„	11 20 57·28	56·99	— 0 29	„	84 22 14·14	13·14	— 1·00
	16 21 47 48·2	„	11 30 2·50	2·01	— 0·49	S L	85 16 19·55	20·18	+ 0·63
	17 21 48 23·5	„	11 34 34·45	34·29	— 0·16	„	85 43 39·52	39·91	+ 0·39
	18 21 48 58·7	„	11 39 6·70	6·34	— 0·36	„	86 11 8·85	9·46	+ 0·61
	19 21 49 34·2	„	11 43 38·73	38·35	— 0·38	„	86 38 47·41	48·20	+ 0·79
	21 21 50 44·9	„	11 52 42·42	42·08	— 0·34	„	87 34 29·33	30·21	+ 0·88
	31 21 56 40·7	„	12 38 4·90	4·41	— 0·49	„	92 18 8·41	7·38	— 1·03
Nov.	1 21 57 17·5	„	12 42 38·41	37·84	— 0·57	„	92 46 40·47	40·26	— 0·21
	11 22 3 51·3	„	13 28 38·60	37 85	— 0·75	„	97 29 18·00	18·56	+ 0·56
	14 22 6 1·2	„	13 42 38·86	38·01	— 0·85	„	98 51 54·91	53·31	— 1·60
	23 22 13 17·6	„	14 25 25·18	24·29	— 0·89	„	102 48 31·69	31·16	— 0·53
Dec.	11 22 32 11·2	„	15 55 20·10	19·34	— 0·76	C	109 18 48·30	48·78	+ 0·48
	13 22 34 40·4	„	16 5 42·81	42·48	— 0·33	„	109 52 50·63	49·69	— 0·94
	14 22 35 57·3	„	16 10 56·47	55·98	— 0·49	„	110 8 58·98	60·24	+ 1·26
	16 22 38 33·7	C	16 21 26·58	25·61	— 0·97	—	——	—	—
	17 22 39 53·7	„	16 26 43·35	42·15	— 1·20	„	110 53 61·30	56·87	— 4·43
1850.									
Jan.	1 23 1 31·5	„	17 47 33·15	32·41	— 0·74	„	113 13 10·96	7·55	— 3·41
	4 23 6 6·0	„	18 3 58 51	57·69	— 0·82	„	113 22 19·62	18·24	— 1·38
	6 23 9 12·	—	——	—	—	—	113 24 48·15	49·16	+ 1·01
	7 23 10 43·7	„	18 20 26·02	24·66	— 1·36	„	113 25 1·45	0·81	— 0·64
	8 23 12 15·8	„	18 25 55·02	53·71	— 1·31	„	113 24 27·38	26·21	— 1·17
	9 23 13 47·2	„	18 31 23 82	22·68	— 1·14	„	113 23 10·33	9·41	— 0·92
	17 23 25 53·9	„	19 15 4·75	4·20	— 0·55	„	112 46 59·68	58·98	— 0·70
	18 23 27 22·8	„	19 20 30·44	29·68	— 0·76	„	112 39 14·34	15·95	+ 1·61
	25 23 37 22·2	„	19 58 7·02	6·51	— 0·51	„	111 26 8·39	8·69	+ 0·30
	27 23 40 4·9	„	20 8 43·49	43·08	— 0·41	„	110 59 18·07	20·05	+ 1·98
	28 23 41 24·8	„	20 13 60·24	59·81	— 0·43	„	110 44 57·59	59·09	+ 1·50
	29 23 42 44·0	„	20 19 16·06	15·49	— 0·57	„	110 29 58·39	61·08	+ 2·69
Feb.	1 23 46 33·6	„	20 34 56·14	55·65	— 0·49	„	109 41 29·82	31·48	+ 1·66
	5 23 51 25·1	„	20 55 34·04	33·46	— 0·58	„	108 28 49·21	49·07	— 0·14
	6 23 52 34·4	„	21 0 40·40	39·89	— 0·51	„	108 9 18·23	18·07	— 0·16
	14 0 0 7·7	„	21 35 50·80	50·65	— 0·15	„	105 38 45·70	44·94	— 0·76
	15 0 1 7·7	„	21 40 47·72	47·33	— 0·39	„	105 15 25·00	24·62	— 0·38
	16 0 2 6·6	„	21 45 43·29	42·80	— 0·49	„	104 51 39·40	39·13	— 0·27
	18 0 4 0·1	„	21 55 30·36	30·24	— 0·12	—	——	—	—
	20 0 5 50·0	„	22 5 13·56	13·12	— 0·44	„	103 12 40·21	40·30	+ 0·09
	21 0 6 43·0	„	22 10 3·13	2·84	— 0·29	„	102 46 61·22	58·06	— 3·16
	22 0 7 34·8	„	22 14 51·88	51·52	— 0·36	„	102 20 60·94	59·61	— 1·33
	23 0 8 26·2	„	22 19 39·62	39·14	— 0·48	„	101 54 41·11	39·18	— 1·98
Mar.	21 0 26 10·5	„	0 19 57·65	57·11	— 0·54	„	89 14 51·16	50·32	— 0·84
	22 0 26 46·2	„	0 24 29·44	29·51	+ 0·07	„	88 44 16·93	18·07	+ 1·14
	23 0 27 22·2	„	0 29 2·24	1·91	— 0·33	„	88 13 47·78	46·92	— 0·86

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF VENUS, *(Continued.)*

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed	N. P. D. from Observation.	N. P. D from N. A.	Error of N. A.
1850.	*d*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Mar.	26	0	29	9·4	C	0 42 39·67	39·49	— 0·18	C	86 42 26·73	27·03	+ 0·30
	27	0	29	45·6	”	0 47 12·52	12·29	— 0·23	”	86 12 7·94	7·38	— 0·56
April	4	0	34	45·9	”	1 23 45·86	45·97	+ 0·11	”	82 13 21·07	19·13	— 1·94
	5	0	35	25·2	1 L	1 28 22·13	22·21	+ 0·08	”	81 44 8·58	7·64	— 0·94
	10	0	38	52·8	”	1 51 32·79	32·95	+ 0·16	”	79 21 14·46	12·94	— 1·52
	13	0	41	5·8	”	2 5 36·03	36·26	+ 0·23	”	77 58 22·58	21·35	— 1·23
	16	0	43	26·8	”	2 19 47·00	47·15	+ 0·15	”	76 38 6·87	4·95	— 1·92
	17	0	44	15·2	”	2 24 32·08	32·60	+ 0·52	”	76 11 58·63	57·62	— 1·01
	19	0	45	55·8	”	2 34 6·38	6·37	— 0·01	”	75 20 45·46	44·34	— 1·12
	23	0	49	28·4	C	2 53 25·45	25·97	+ 0·52	”	73 42 46·21	45·15	— 1·06
	25	0	51	20·8	1 L	3 3 11·54	12·08	+ 0·54	”	72 56 10·52	11·29	+ 0·77
	26	0	52	18·9	”	3 8 5·71	6·76	+ 1·05	”	72 33 33·86	33·37	— 0·49
	30	0	56	22·1	”	3 27 55·81	56·62	+ 0·81	”	71 7 39·31	38·70	— 0·61
May	1	0	57	25·6	C	3 32 56·52	56·89	+ 0·37	”	70 47 22·98	22·85	— 0·13
	2	0	58	30·4	”	3 37 57·99	58·28	+ 0·29	”	70 27 37·32	37·50	+ 0·18
	3	0	59	35·9	1 L	3 43 0·59	0·94	+ 0·35	—	——	—	—
	7	1	4	10·1	”	4 3 21·36	21·85	+ 0·49	”	68 56 53·18	52·86	— 0·32
	8	1	5	21·1	”	4 8 29·45	29·81	+ 0·36	”	68 40 25·40	25·02	— 0·38
	9	1	6	33·4	”	4 13 38·47	38·81	+ 0·34	”	68 24 30·34	32·27	+ 1·93
	10	1	7	46·8	”	4 18 48·33	48·82	+ 0·49	”	68 9 14·92	15·31	+ 0·39
	11	1	9	1·0	”	4 23 59·56	59·83	+ 0·27	”	67 54 33·70	34·64	+ 0·94
	13	1	11	32·1	”	4 34 24·38	24·64	+ 0·26	”	67 27 4·08	4·89	+ 0·81
	14	1	12	49·2	”	4 39 38·03	38·40	+ 0·37	”	67 14 16·17	16·88	+ 0·71
	17	1	16	45·3	”	4 55 24·51	24·59	+ 0·08	”	66 39 44·18	46·40	+ 2·22
	18	1	18	5·3	”	5 0 40·97	41·46	+ 0·49	”	66 29 34·34	35·74	+ 1·40
	20	1	20	47·3	”	5 11 16·57	17·17	+ 0·60	”	66 11 16·30	16·23	+ 0·07
	21	1	22	9·2	”	5 16 35·26	35·88	+ 0·62	”	66 3 6·37	8·16	+ 1·79
	27	1	30	30·1	C	5 48 36·10	37·09	+ 0·99	”	65 29 0·36	2·99	+ 2·63
	28	1	31	54·6	”	5 53 57·87	58·23	+ 0·36	”	65 25 49·86	51·64	+ 1·78
	29	1	33	19·0	”	5 59 19·12	19·51	+ 0·39	”	65 23 20·46	23·45	+ 2·99
June	3	1	40	21·1	”	6 26 5·06	5·49	+ 0·43	”	65 21 48·83	53·19	+ 4·36
	5	1	43	8·6	”	6 36 45·98	46·55	+ 0·57	”	65 26 16·38	18·95	+ 2·57
	12	1	52	39·5	1 L	7 13 54·84	55·18	+ 0·34	”	66 4 17·83	19·12	+ 1·29
	13	1	53	58·4	”	7 19 10·43	10·83	+ 0·40	”	66 12 30·80	32·65	+ 1·85
	19	2	1	31·7	”	7 50 24·57	24·93	+ 0·36	”	67 15 57·84	60 28	+ 2·44
Aug.	13	2	36	36·8	”	12 2 25·86	25·68	— 0·18	—	——	—	—
	21	2	38	3·6	”	12 35 24 92	24·33	— 0·59	N L	93 55 40·60	38·90	— 1·70
	23	2	38	21·7	”	12 43 37·18	36·52	— 0·66	S L	94 56 52·59	49·94	— 2·65
	24	2	38	31·4	”	12 47 42·73	42·40	— 0·33	N L	95 27 20·13	18·09	— 2·04
	27	2	38	59·1	”	12 59 60·44	59·63	— 0·81	”	96 58 5·78	4·79	— 0·99
Sept.	10	2	41	16·7	”	13 57 30·15	29·81	— 0·34	”	103 42 5·96	2·93	— 3·03
	27	2	44	53·3	”	15 8 9·25	8·47	— 0·78	”	110 38 7·42	5·55	— 1·87
Oct.	1	2	45	47·5	”	15 24 49·38	48·82	— 0·56	”	111 59 19·76	16·17	— 3·59
	2	2	46	0·6	”	15 28 59·44	58·51	— 0·93	”	112 18 30·61	24·77	— 5·84
	3	2	46	13·2	”	15 33 8·78	7·93	— 0·85	”	112 37 7·94	4·90	— 3·04
	5	2	46	37·8	”	15 41 26·35	25·75	— 0·60	”	113 12 62·97	58·08	— 4·89
	7	2	47	0·6	”	15 49 42·38	41·67	— 0 71	”	113 46 54·93	52·22	— 2·71
	9	2	47	20·9	”	15 57 55·74	55·05	— 0·69	”	114 18 52·51	44·31	— 8·20
	11	2	47	38·1	”	16 6 6·08	5·13	— 0·95	”	114 48 35·23	31·61	— 3·62
	12	2	47	44·8	”	16 10 9·35	8·65	— 0·70	”	115 2 40·93	37·76	— 3·17
	14	2	47	55·3	”	16 18 13·09	12·15	— 0·94	”	115 29 16·98	13·69	— 3·29
	17	2	48	0·0	”	16 30 7·69	6·69	— 1·00	”	116 5 4·29	3·39	— 0·90

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF VENUS, (Continued.)

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1850.	d.	h.	m.	s.		h m. s.	s.	s.		° ′ ″	″	″
Oct.	19	2	47	54·8	1 L	16 37 55·41	54·38	— 1·03	N L	116 26 13·99	11·59	— 2·40
	21	2	47	40·8	››	16 45 34·72	33·79	— 0·93	››	116 45 10·21	7·14	— 3·07
	22	2	47	30·3	››	16 49 20·70	20·05	— 0 65	››	116 53 48·21	45·10	— 3·11
	23	2	47	17·6	››	16 53 4·72	3·79	— 0·93	››	117 1 53·61	49·87	— 3·74
	29	2	44	59 5	››	17 14 25·21	24·08	— 1·13	››	117 38 49·90	46·94	— 2 96
	30	2	44	24·4	››	17 17 46·65	45·42	— 1·23	››	117 43 4·66	2·61	— 2·05
	31	2	43	44·9	››	17 21 3·72	2·80	— 0·92	››	117 46 49·62	46·30	— 3·32
Nov.	2	2	42	14·3	››	17 27 26·01	24·76	— 1·25	››	117 52 41·60	39·00	— 2·60
	4	2	40	25·0	››	17 33 29·75	28·18	— 1·57	››	117 56 27·49	27·28	— 0·21
	5	2	39	22·8	››	17 36 23·90	22·30	— 1·60	››	117 57 38·79	35·52	— 3·27
	13	2	27	28·4	››	17 55 59·88	58·50	— 1·38	››	117 48 60 86	59·73	— 1·13
	14	2	25	28·1	››	17 57 55·99	54·08	— 1·91	››	117 45 47·99	46 59	— 1·40
	15	2	23	19·5	››	17 59 43·62	41·68	— 1·94	››	117 42 9·08	5·88	— 3·20
	20	2	10	27·1	››	18 6 32·05	29·89	— 2·16	S L	117 16 62·69	50·13	—12·56
	21	2	7	24·8	››	18 7 25·72	23·62	— 2·10	››	117 10 34·80	23·82	—10·98
	23	2	0	50·2	››	18 8 43·26	41·19	— 2·07	N L	116 56 13·84	11·18	— 2·66
	28	1	41	22·0	››	18 8 54·80	52·25	— 2·55	››	116 12 25·81	25·49	— 0·32
Dec.	4	1	12	8·3	››	18 3 15·60	12·53	— 3·07	››	115 3 50·24	49·47	— 0·77
	5	1	6	40·0	››	18 1 43·13	40·12	— 3·01	››	114 50 38·06	39·30	+ 1·24
	6	1	1	2·3	››	17 59 61·57	58·37	— 3·20	››	114 36 60·23	59·99	— 0·24
	8	0	49	22·2	››	17 56 12·17	8·98	— 3·19	—	——	—	—
	9	0	43	20·0	››	17 54 6·09	2·61	— 3·48	››	113 53 19·49	16·62	— 2·87
	10	0	37	11·2	››	17 51 52·37	49·44	— 2·93	››	113 37 51·10	51·55	+ 0·45
	12	0	24	36·8	››	17 47 8·87	6·46	— 2·41	››	113 5 57·55	58·56	+ 1·01
	13	0	18	13·1	››	17 44 40·68	37·73	— 2·95	››	112 49 34·43	35·72	+ 1·29
	14	0	11	46·4	››	17 42 9·32	6·58	— 2·74	››	112 32 61·64	59·88	— 1·76
	17	23	45	52·7	2 L	17 31 54·27	51·65	— 2·62	—	——	—	—
	20	23	26	46·7	››	17 24 34·04	31·10	— 2·94	S L	110 36 31·61	26·03	— 5 58
	22	23	14	26·8	››	17 20 5·24	2·06	— 3·18	››	110 5 22·35	17 82	— 4·53
	23	23	8	27·0	››	17 17 60·68	57·50	— 3·18	››	109 50 33·11	27·33	— 5·78
	25	22	56	49·4	››	17 14 14·70	11·71	— 2·99	—	——	—	—
1851.												
Jan.	2	22	16	32·5	2 L	17 5 23·54	21·04	— 2·50	››	108 0 50·10	45·27	— 4·83
	3	22	12	15·0	››	17 4 62·02	59·71	— 2·31	››	107 54 9·72	10·26	+ 0·54
	6	22	0	22·3	››	17 4 57·51	55·52	— 1·99	—	——	—	—
	7	21	56	45·0	››	17 5 15·86	13·59	— 2·27	››	107 35 44·18	40·79	— 3·39
	8	21	53	16·0	››	17 5 43·15	41·11	— 2·04	››	107 32 57·66	55·43	— 2·23
	9	21	49	57·2	››	17 6 19·98	17·89	— 2·09	››	107 30 53·03	50·73	— 2·30
	10	21	46	46·3	››	17 7 5·73	3·73	— 2·00	››	107 29 27·44	25·44	— 2·00
	13	21	38	7·6	››	17 10 15·07	13·37	— 1·70	››	107 28 46·32	45·88	— 0·44
	14	21	35	31·2	››	17 11 34·92	33·23	— 1·69	››	107 29 37·22	37·69	+ 0·47
	16	21	30	42·2	››	17 14 38·16	36·54	— 1·62	››	107 32 46·12	46·07	— 0·05
	19	21	24	23·8	››	17 20 8·49	6·94	— 1·55	››	107 40 28 61	27·05	— 1·56
	20	21	22	31·2	››	17 22 12·51	10·97	— 1·54	››	107 43 38·95	39·54	+ 0·59
	22	21	19	6·2	››	17 26 39·75	38·43	— 1·32	—	——	—	—
	23	21	17	32·5	››	17 29 2·69	1·42	— 1·27	››	107 54 44·87	43·84	— 1·03
	24	21	16	5·3	››	17 31 31·64	30·30	— 1·34	››	107 58 48·17	47·35	— 0·82
	26	21	13	27·3	››	17 36 46·17	44·92	— 1·25	››	108 7 16·56	15·67	— 0·89
	27	21	12	16·2	››	17 39 31·56	30·22	— 1·34	››	108 11 34·71	36·69	+ 1·98
	28	21	11	10·3	››	17 42 21·90	20·52	— 1·38	››	108 15 58·73	59·75	+ 1·02
	29	21	10	8·6	››	17 45 16·85	15·87	— 0·98	››	108 20 22·33	23·21	+ 0·88
	31	21	8	20·1	››	17 51 21·22	20·34	— 0·88	—	——	—	—
Feb.	2	21	6	49 3	››	17 57 43·13	42·26	— 0·87	››	108 37 27·48	28·48	+ 1·00
	3	21	6	9·3	››	18 0 59·92	59·34	— 0·58	››	108 41 29·97	29·93	— 0·04

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF VENUS, *(Continued.)*

Mean Solar Time of Observation					Point observed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observed	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1851.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Feb.	4	21	5	34·3	2 L	18 4 21·46	20·29	— 1·17	S L	108 45 24·03	22·59	— 1·44
	6	21	4	34·2	"	18 11 14·31	13·31	— 1·00	"	108 52 34·73	36·03	+ 1·30
	7	21	4	9·4	"	18 14 45·98	45·08	— 0·90	"	108 55 53·08	54·26	+ 1·18
	9	21	3	30·2	"	18 21 59·61	58·49	— 1·12	"	109 1 49·76	47·88	— 1·88
	10	21	3	14·8	"	18 25 40·77	39·90	— 0·87	"	109 4 19·64	21·08	+ 1·44
	11	21	3	2·2	"	18 29 25·14	24·29	— 0·85	"	109 6 36·47	37·05	+ 0·58
	13	21	2	46·6	"	18 37 2·37	1·56	— 0·81	"	109 10 11·09	12·46	+ 1·37
	14	21	2	42·5	"	18 40 54·94	54·24	— 0·70	"	109 11 31·43	32·11	+ 0·68
	17	21	2	45·7	"	18 52 47·86	47·06	— 0·80	"	109 13 15·94	19·05	+ 3·11
	18	21	2	51·0	"	18 56 49·93	49·25	— 0·68	"	109 13 7·27	9·16	+ 1·89
	19	21	2	59·1	"	19 0 54·33	53·55	— 0·78	"	109 12 33·22	35·30	+ 2·08
	20	21	3	9·2	"	19 4 61·00	59·90	— 1·10	"	109 11 36·34	36·78	+ 0·44
	21	21	3	20·7	"	19 9 9·27	8·13	— 1·14	"	109 10 8·43	12·95	+ 4·52
	24	21	4	6·0	"	19 21 44·45	43·39	— 1·06	"	109 3 23·64	24·23	+ 0·59
	25	21	4	24·3	"	19 25 59·22	58·33	— 0·89	"	109 0 10·98	14·04	+ 3·06
	26	21	4	43·9	"	19 30 15·47	14·79	— 0·68	"	108 56 35·63	36·24	+ 0·61
	27	21	5	4·9	"	19 34 33·08	32·38	— 0·70	—	——	—	—
	28	21	5	27·2	"	19 38 52·07	51·34	— 0·73	—	——	—	—
Mar.	3	21	6	40·8	"	19 51 55·61	54·80	— 0·81	"	108 31 17·95	20·92	+ 2·97
	4	21	7	8·1	"	19 56 18·85	17·88	— 0·97	"	108 24 47·77	51·03	+ 3·26
	6	21	8	2·9	"	20 5 7·24	6·53	— 0·71	"	108 10 20·23	23·12	+ 2·89
	12	21	11	3·7	"	20 31 47·91	47·16	— 0·75	"	107 15 7·42	11·24	+ 3·82
	13	21	11	35·6	"	20 36 16·29	15·48	— 0·81	"	107 4 14·70	16·13	+ 1·43
	14	21	12	7·3	"	20 40 44·89	44·09	— 0·80	"	106 52 51·66	52·33	+ 0·67
	16	21	13	12·2	"	20 49 42·80	42·05	— 0·75	—	——	—	—
	17	21	13	44·5	"	20 54 11·78	11·34	— 0·44	"	106 15 42·68	47·01	+ 4·33
	18	21	14	17·5	"	20 58 41·37	40·66	— 0·71	"	106 2 27·02	28·10	+ 1·08
	20	21	15	22·9	"	21 7 40·26	39·62	— 0·64	"	105 34 20·57	26·21	+ 5·64
	21	21	15	56·2	"	21 12 9·97	9·14	— 0·83	"	105 19 39·18	43·63	+ 4·45
	23	21	17	1·3	"	21 21 8·81	8·02	— 0·79	"	104 48 51·49	57·62	+ 6·13
	28	21	19	43·3	"	21 43 33·47	32·94	— 0·53	"	103 24 18·44	25·75	+ 7·31
	31	21	21	17·4	"	21 56 57·77	57·22	— 0·55	"	102 28 41·19	47·58	+ 6·39
April	1	21	21	49·0	"	22 1 25·44	24·73	— 0·71	"	102 9 25·39	27·92	+ 2·53
	2	21	22	18·6	"	22 5 52·48	51·96	— 0·52	"	101 49 42·93	46·33	+ 3·40
	3	21	22	48·7	"	22 10 18·99	18·84	— 0·15	—	——	—	—
	4	21	23	19·2	"	22 14 46·33	45·40	— 0·93	"	101 9 17·59	18·24	+ 0·65
	6	21	24	18·1	"	22 23 37·97	37·52	— 0·45	"	100 27 26·88	27·09	+ 0·21
	7	21	24	46·3	"	22 28 3·39	3·07	— 0·32	"	100 6 1·85	1·81	— 0·04
	8	21	25	15·0	"	22 32 28·70	28·27	— 0·43	"	99 44 14·72	17·55	+ 2·83
	9	21	25	43·5	"	22 36 53·85	53·13	— 0·72	"	99 22 11·90	14·66	+ 2·76
	10	21	26	11·5	"	22 41 18·14	17·70	— 0·44	"	98 59 50·26	53·80	+ 3·54
	11	21	26	39·1	"	22 45 42·60	41·92	— 0·68	"	98 37 15·25	15·65	+ 0·40
	14	21	27	59·8	"	22 58 53·45	52·88	— 0·57	"	97 27 42·48	42·09	— 0·39
	16	21	28	52·6	"	23 7 39·24	38·83	— 0·41	"	96 40 2·32	3·14	+ 0·82
	21	21	31	0·3	"	23 29 30·21	29·85	— 0·36	"	94 37 1·69	2·46	+ 0·77
	25	21	32	40·0	"	23 46 56·41	55·91	— 0·50	"	92 55 18·81	18·63	— 0·18
	27	21	33	29·5	"	23 55 38·84	38·38	— 0·46	"	92 3 33·85	34·27	+ 0·42
May	8	21	38	4·2	"	0 43 35·85	35·53	— 0·32	—	——	—	—
	9	21	38	29·7	"	0 47 58·16	58·11	— 0·05	"	86 46 19·78	22·15	+ 2·37
	13	21	40	17·2	"	1 5 32·07	31·90	— 0·17	"	85 0 5·87	8·46	+ 2·59
	14	21	40	44·4	"	1 9 56·40	56·39	— 0·01	"	84 33 40·89	41·79	+ 0·90
	21	21	44	14·5	"	1 41 2·68	2·84	+ 0·16	"	81 31 6·53	5·04	— 1·49
	22	21	44	47·5	"	1 45 32·14	32·00	— 0·14	—	——	—	—
	25	21	46	28·7	"	1 59 3·79	3·39	— 0·40	"	79 49 40·28	40·28	0·00
	27	21	47	41·0	"	2 8 8·97	9·42	+ 0·45	"	79 0 3·19	3·17	— 0·02

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF VENUS, *(Continued.)*

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed.	N. P. D from Observation.	N. P. D. from N. A.	Error of N. A.
1851.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
June	6	21	54	33·5	C	2 54 29·18	29·49	+ 0·31	N L	75 6 45·61	51·00	+ 5·39
	13	22	0	24·0	”	3 27 56·43	56·59	+ 0·16	”	72 42 41·02	40·45	— 0·57
	15	22	2	14·0	”	3 37 39·77	40·12	+ 0·35	—	——	—	—
	16	22	3	11·6	”	3 42 33·06	33·61	+ 0·55	”	71 46 53·20	48·45	— 4·75
	17	22	4	9·3	”	3 47 27·82	28·45	+ 0·63	”	71 29 8·85	6·30	— 2·55
	20	22	7	9·6	”	4 2 18·57	18·82	+ 0·25	”	70 38 41·52	41·06	— 0·46
	23	22	10	19·6	”	4 17 18·96	19·47	+ 0·51	”	69 52 40·91	40·14	— 0·77
	24	22	11	26·0	”	4 22 21·40	21·76	+ 0·36	”	69 38 22·33	21·56	— 0·77
	25	22	12	36·	—	——	—	—	”	69 24 37·07	34·83	— 2·24
July	1	22	19	30·	—	——	—	—	C	68 13 34·31	35·93	+ 1·62
	10	22	30	58·5	2 L	5 45 2·57	3·05	+ 0·48	”	67 7 44·02	42·35	— 1·67
	25	22	51	9·3	C	7 4 25·03	25·09	+ 0·06	”	67 15 46·13	43·87	— 2·26
Aug.	10	23	11	26·4	”	8 27 50·74	50·88	+ 0·14	”	70 7 25·38	26·09	+ 0·71
	13	23	14	52·2	”	8 43 6·90	7·20	+ 0·30	”	70 56 53 67	52·73	— 0·94
	15	23	17	4·6	”	8 53 12·68	13·31	+ 0·63	”	71 32 32·31	35·20	+ 2·89
	31	23	32	24·3	”	10 11 39·51	39·72	+ 0·21	”	77 26 55·67	55·43	— 0·24
Sept.	1	23	33	13·6	”	10 16 25·62	25·59	— 0·03	”	77 52 30·54	30·64	+ 0·10
	2	23	34	2·2	”	10 21 10·89	10·77	— 0·12	”	78 18 25·40	26·87	+ 1·47
	3	23	34	49·6	”	10 25 55·14	55·01	— 0·13	”	78 44 41·11	42·00	+ 0·89
	5	23	36	22·1	”	10 35 20·99	21·03	+ 0·04	”	79 38 8·54	7·83	— 0·71
	7	23	37	52·5	”	10 44 43·99	43·96	— 0·03	”	80 32 41·71	42·35	+ 0·64
	9	23	39	18·2	”	10 54 4·10	4·04	— 0·06	”	81 28 23·90	19·93	— 3·97
	11	23	40	42·1	”	11 3 21·10	21·53	+ 0·43	”	82 24 53·67	56·09	+ 2·42
	12	23	41	24·7	”	11 7 59·66	59·42	— 0·24	”	82 53 32·78	32·19	— 0·59
Oct.	16	0	2	54·3	”	13 39 40·03	39·13	— 0·90	”	99 18 34·97	33·21	— 1·76
	17	0	3	39·0	1 L	13 44 21·68	20·82	— 0·86	”	99 47 8·42	14·30	+ 5·88
	20	0	5	59·4	C	13 58 31·90	30·96	— 0·94	”	101 11 34·43	34·42	— 0·01
	23	0	8	27·9	”	14 12 50·44	49·42	— 1·02	”	102 33 37·67	38·57	+ 0·90
	25	0	10	11·6	”	14 22 27·58	26·73	— 0·85	”	103 26 52·80	52·05	— 0·75
	30	0	14	50·5	”	14 46 50·00	49·06	— 0·94	”	105 33 56·93	56·43	— 0·50
	31	0	15	49·7	”	14 51 45·51	44·96	— 0·55	”	105 58 14·11	13·11	— 1·00
Nov.	8	0	24	27·1	”	15 31 56·40	55·70	— 0·70	”	108 56 31·98	32·47	+ 0·49
	17	0	35	42·5	”	16 18 42·57	41·89	— 0·68	—	——	—	—
	20	0	39	48·5	”	16 34 38·90	38·25	— 0·65	”	112 20 18·90	18·15	— 0·75
	21	0	41	11·6	1 L	16 39 59·12	59·13	+ 0·01	”	112 33 16·70	17·51	+ 0·81
	22	0	42	37·2	”	16 45 21·34	20·98	— 0·36	”	112 45 38·01	37·00	— 1·01
	23	0	44	2·4	”	16 50 43·94	43·79	— 0·15	—	——	—	—
	24	0	45	30·3	”	16 56 8·01	7·50	— 0·51	”	113 8 15·41	14·31	— 1·10
	25	0	46	58·2	”	17 1 32·92	32·07	— 0·85	”	113 18 32·31	31·01	— 1·30
	26	0	48	26·7	”	17 6 58·22	57·42	— 0·80	”	113 28 3·66	10·24	+ 6·58
	27	0	49	55·9	”	17 12 24·31	23·59	— 0·72	”	113 36 58·27	58·29	+ 0·02
	28	0	51	25·5	”	17 17 50·61	50·32	— 0·29	”	113 45 6·29	7·75	+ 1·46
	29	0	52	56·1	”	17 23 18·18	17·75	— 0·43	”	113 52 36·33	34·10	— 2·23
Dec.	1	0	55	58·7	”	17 34 15·04	14·24	— 0·80	”	114 5 13·72	15·82	+ 2·10
	2	0	57	30·6	”	17 39 43·65	43·18	— 0·47	”	114 10 28·95	30·31	+ 1·36
	3	0	59	3·3	”	17 45 13·25	12·52	— 0·73	”	114 14 58·27	60·40	+ 2·13
	4	1	0	36·6	”	17 50 42·94	42·21	— 0·73	”	114 18 44·77	45·78	+ 1·01
	5	1	2	9·3	”	17 56 12·73	12·14	— 0.59	”	114 21 44·93	46·26	+ 1·33
	8	1	6	49·4	”	18 12 43·55	42·83	— 0·72	”	114 26 16·15	16·61	+ 0·46
	9	1	8	23·5	C	18 18 13·64	13·12	— 0·52	”	114 26 15·53	13·09	— 2·44
	10	1	9	56·5	1 L	18 23 44·07	43·38	— 0·69	”	114 25 28·45	30·14	+ 1·69

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF VENUS, (Continued.)

Mean Solar Time of Observation.					Point observed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1851.	d.	h.	m.	s.		h. m. s.	s.	s.		° ' "	"	"
Dec.	11	1	11	30·0	C	18 29 14·00	13·49	— 0·51	C	114 23 58·89	58·89	0·00
	17	1	20	43·0	1 L	19 2 8·41	7·74	— 0·67	„	113 59 5·49	4·25	— 1·24
	20	1	25	12·9	C	19 18 28·28	27·87	— 0·41	„	113 36 37·28	36·91	— 0·37
	24	1	31	1·4	1 L	19 40 4·37	3·80	— 0·57	S L	112 56 37·57	36·31	— 1·26
	26	1	33	50·5	„	19 50 46·63	46·13	— 0·50	—	—	—	—
1852.												
Jan.	6	1	47	54·5	1 L	20 48 15·17	14·75	— 0·42	S L	109 33 16·86	15·08	— 1·78
	8	1	50	11·1	„	20 58 24·89	24·75	— 0·14	„	108 52 59·94	59·82	— 0·12
	10	1	52	22·2	„	21 8 29·65	29·26	— 0·39	„	108 10 38·32	36·83	— 1·49
	15	1	57	25·9	„	21 33 16·74	16·58	— 0·16	„	106 16 1·85	1·18	— 0·67
	16	1	58	32·5	„	21 38 9·91	10·01	+ 0·10	„	105 51 45·82	43·08	— 2·74
	17	1	59	18·0	„	21 43 2·30	2·10	— 0·20	„	105 26 60·54	59·79	— 0·75
	21	2	2	46·3	„	22 2 17·52	17·48	— 0·04	„	103 44 4·09	3·98	— 0·11
	22	2	3	35·1	„	22 7 3·12	3·16	+ 0·04	C	103 17 25·38	23·69	— 1·69
	23	2	4	23·2	„	22 11 47·84	47·63	— 0·21	S L	102 50 25·53	22·49	— 3·04
	24	2	5	9·6	„	22 16 31·00	30·91	— 0·09	C	102 23 2·39	1·18	— 1·21
	26	2	6	39·5	„	22 25 54·16	53·93	— 0·23	„	101 27 22·46	21·45	— 1·01
	27	2	7	22·4	„	22 30 33·59	33·73	+ 0·14	S L	100 59 7·20	4·52	— 2·68
	28	2	8	5·0	„	22 35 12·83	12·45	— 0·38	C	100 30 32·51	30·47	— 2·04
	29	2	8	45·7	„	22 39 50·08	50·09	+ 0·01	S L	100 1 44·82	40·70	— 4·12
	30	2	9	25·5	„	22 44 26·82	26·71	— 0·11	„	99 32 38·40	35·42	— 2·98
Feb.	2	2	11	19·0	„	22 58 10·90	10·62	— 0·28	„	98 3 57·86	55·45	— 2·41
	3	2	11	54·8	„	23 2 43·43	43·39	— 0·04	„	97 33 59·06	56·58	— 2·48
	4	2	12	30·1	„	23 7 15·46	15·30	— 0·16	„	97 3 48·14	46·74	— 1·40
	5	2	13	4·5	„	23 11 46·44	46·39	— 0·05	—	—	—	—
	6	2	13	38·1	„	23 16 16 85	16·64	— 0·21	„	96 2 55·79	55·28	— 0·51
	9	2	15	14·8	„	23 29 43·27	43·02	— 0·25	„	94 30 35·04	32·75	— 2·29
	11	2	16	15·9	„	23 38 37·79	37·50	— 0·29	„	93 28 23·35	20·96	— 2·39
	13	2	17	14·7	„	23 47 29·87	30·01	+ 0·14	„	92 25 47·84	45·96	— 1·88
	14	2	17	43·6	„	23 51 55·29	55·45	+ 0·16	„	91 54 24·44	22·67	— 1·77
	16	2	18	40·1	„	0 0 45·04	45·11	+ 0·07	„	90 51 29·56	27·23	— 2·33
	17	2	19	7·8	„	0 5 9·33	9·42	+ 0·09	„	90 19 58·26	56·34	— 1·92
	20	2	20	29·0	„	0 18 19·86	20·62	+ 0·76	„	88 45 24·45	20·21	— 4·24
	21	2	20	55·7	„	0 22 43·41	43·97	+ 0·56	„	88 13 51·84	49·37	— 2·48
	23	2	21	48·6	„	0 31 29·65	30·17	+ 0·52	„	87 10 56·62	54·03	— 2·59
	24	2	22	15·0	„	0 35 52·55	53·11	+ 0·56	„	86 39 33·14	31·04	— 2·10
	26	2	23	7·8	„	0 44 38·71	38·89	+ 0·18	„	85 36 61·18	58·10	— 3·08
	27	2	23	36·	—	—	—	—	„	85 5 51·04	50·21	— 0·83
	28	2	24	0·0	„	0 53 24·12	24·79	+ 0·67	„	84 34 48·73	47·17	— 1·56
Mar.	1	2	24	53·6	„	1 2 10·71	11·02	+ 0·31	„	83 33 6·18	4·12	— 2·06
	2	2	25	20·2	„	1 6 33·85	34·39	+ 0·54	„	83 2 29 60	25·01	— 4·59
	3	2	25	47·1	„	1 10 57·70	57·91	+ 0·21	„	82 31 58·37	54·94	— 3·43
	4	2	26	14·2	„	1 15 21·12	21·66	+ 0·54	„	82 1 36·91	34·88	— 2·03
	5	2	26	41·7	„	1 19 45·09	45·68	+ 0·59	„	81 31 28·31	25·21	— 3·10
	6	2	27	9·5	„	1 24 9·82	9·97	+ 0·15	„	81 1 30·15	27·08	— 3·07
	9	2	28	34·4	„	1 37 24·65	25·00	+ 0·35	„	79 32 50·57	46 55	— 4·02
	10	2	29	3·8	„	1 41 50·36	50·80	+ 0·44	„	79 3 42·83	40·23	— 2·60
	11	2	29	32·9	„	1 46 16·58	17·06	+ 0·48	„	78 34 50·61	48·62	— 1·99
	12	2	30	3·3	„	1 50 43·58	43·84	+ 0·26	„	78 6 14·84	12·44	— 2·40
	13	2	30	33·9	„	1 55 10·85	11·01	+ 0·16	„	77 37 54·14	52·49	— 1·65
	17	2	32	42·3	„	2 13 5·85	5·35	+ 0·50	„	75 47 29·00	26·94	— 2·06
	19	2	33	49·2	„	2 22 5·95	6·22	+ 0·27	„	74 54 11·53	8·59	— 2·94
	20	2	34	24·1	„	2 26 36·92	37·53	+ 0·61	„	74 28 2·84	0·48	— 2·36
	22	2	35	35·5	„	2 35 41·72	42·10	+ 0·38	„	73 36 48·73	49·36	+ 0·63

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF VENUS, (Continued.)

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1852.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Mar.	23	2	36	11·7	1 L	2 40 14·90	15·37	+ 0·47	S L	73 11 50·21	47·96	— 2·25
	25	2	37	27·5	»	2 49 23·67	23·88	+ 0·21	»	72 22 55·60	56·49	+ 0·89
	26	2	38	5·7	»	2 53 58·64	59·10	+ 0·46	»	71 59 10·68	8·02	— 2·66
	27	2	38	44·8	»	2 58 34·53	34·98	+ 0·45	»	71 35 47·83	45·02	— 2·81
	29	2	40	5·3	»	3 7 48·28	48·62	+ 0·34	»	70 50 20·89	18·65	— 2·24
	30	2	40	46·5	»	3 12 26·26	26·38	+ 0·12	»	70 28 16·42	16·53	+ 0·11
	31	2	41	28·2	»	3 17 4·31	4·80	+ 0·49	»	70 6 43·70	42·51	— 1·19
April	1	2	42	10·1	»	3 21 43·13	43·65	+ 0·52	»	69 45 40·36	37·37	— 2·99
	2	2	42	53·1	»	3 26 22·82	23·18	+ 0·36	»	69 25 4·43	1·54	— 2·89
	3	2	43	36·5	»	3 31 2·71	3·24	+ 0 53	»	69 4 59·24	55·59	— 3·65
	5	2	45	5·0	»	3 40 25·27	24·96	— 0·31	»	68 26 12·66	15·69	+ 3·03
	6	2	45	50·0	»	3 45 6·00	6·56	+ 0·56	—	—	—	—
	8	2	47	20·9	»	3 54 30·48	31·09	+ 0·61	C	67 32 24·39	13·39	—11·00
	13	2	51	15·1	»	4 18 7·90	8·72	+ 0·82	—	—	—	—
	14	2	52	0·	—	—	—	—	S L	65 59 8·80	10·10	+ 1·30
	15	2	52	49·9	»	4 27 36·81	37·42	+ 0·61	C	65 45 40·55	41·10	+ 0·55
	16	2	53	38·0	»	4 32 21·21	21·93	+ 0·72	»	65 32 47·17	47·61	+ 0·44
	19	2	56	0·9	»	4 46 34·51	35·29	+ 0·78	S L	64 57 43·94	44·07	+ 0·13
	20	2	56	48·4	»	4 51 18·68	19·49	+ 0·81	»	64 47 13·82	15·94	+ 2·12
	21	2	57	35·6	»	4 56 2·55	3·44	+ 0·89	»	64 37 24·81	24·72	— 0·09
	22	2	58	22·6	»	5 0 46·28	47·08	+ 0·80	»	64 28 8·40	11·68	+ 3·28
	24	2	59	55·2	»	5 10 12·21	13·00	+ 0·79	»	64 11 34·38	35·97	+ 1·59
	27	3	2	9·4	»	5 24 16·55	17·40	+ 0·85	»	63 51 20·46	19·80	— 0·66
	28	3	2	52·7	»	5 28 56·58	57·30	+ 0·72	»	63 45 50·04	51·09	+ 1·05
	29	3	3	35·1	»	5 33 35·63	36·29	+ 0·66	»	63 40 55·70	57·54	+ 1·84
	30	3	4	16·2	»	5 38 13·19	14·25	+ 1·06	»	63 36 42·07	42·28	+ 0·21
May	7	3	8	29·4	»	6 10 3·10	3·70	+ 0·60	C	63 24 2·72	6·17	+ 3·45
	10	3	9	53·3	»	6 23 16·64	17·24	+ 0·60	»	63 27 32·95	38·12	+ 5·17
	25	3	11	20·5	»	7 23 53·22	53·59	+ 0·37	N L	64 56 29·82	39·02	+ 9·20
	26	3	11	1·2	»	7 27 30·36	30·66	+ 0·30	»	65 6 7·10	14·99	+ 7·89
	31	3	8	23·6	»	7 44 34·57	35·50	+ 0·93	»	65 59 32·11	40·48	+ 8·37
June	1	3	7	38·9	»	7 47 46·66	47·44	+ 0·78	»	66 11 12·89	20·02	+ 7·13
	2	3	6	49·8	»	7 50 53·85	54·74	+ 0·89	»	66 23 10·40	16·72	+ 6·32
	3	3	5	55·8	»	7 53 56·40	57·25	+ 0·85	»	66 35 21·88	29·61	+ 7·73
	4	3	4	57·0	»	7 56 53 98	54·82	+ 0·84	»	66 47 52·40	57·61	+ 5·21
	5	3	3	52·8	»	7 59 46·47	47·34	+ 0·87	»	67 0 33·64	39·63	+ 5·99
	7	3	1	29·4	»	8 5 15·60	16·57	+ 0·97	»	67 26 35·01	41·71	+ 6·70
	8	3	0	9·3	»	8 7 52·16	52·98	+ 0·82	»	67 39 53·19	59·39	+ 6·20
July	7	1	27	50·0	»	8 29 38·31	39·56	+ 1·25	»	73 51 59·20	59·83	+ 0·63
	10	1	11	7·5	»	8 24 42·39	43·80	+ 1·41	»	74 18 2·14	3·31	+ 1·17
	12	0	59	18·5	»	8 20 44·57	45·83	+ 1·26	»	74 33 10·30	10·40	+ 0·10
	14	0	47	1·4	»	8 16 18·44	19·89	+ 1·45	»	74 46 24·85	24·79	— 0·06
	16	0	34	21·8	»	8 11 29·89	31·33	+ 1·44	»	74 57 44·08	44·49	+ 0·41
Aug.	24	21	22	52·7	2 L	7 37 8·89	9·22	+ 0·33	S L	74 8 38·77	34·15	— 4·62
	25	21	20	50·5	»	7 39 3·24	3·65	+ 0·41	»	74 6 29·96	23·87	— 6·09
	26	21	18	56·4	»	7 41 4·60	4·62	+ 0·02	»	74 4 31·76	26·55	— 5·21
	27	21	17	6·6	»	7 43 11·48	11·81	+ 0·33	»	74 2 51·92	46·34	— 5·58
Sept.	6	21	3	54·2	»	8 9 22·66	22·58	— 0·08	»	74 4 11·92	4·83	— 7·09
	19	20	56	29·1	»	8 53 11·64	11·98	+ 0·34	»	75 7 28·89	24·60	— 4·29
	20	20	56	13·9	»	8 56 52·63	52·96	+ 0·33	»	75 15 34·49	31·08	— 3·41
	21	20	56	0·1	»	9 0 35·87	36·04	+ 0·17	»	75 24 7·81	6·03	— 1·78

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF VENUS, (Continued.)

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.			A. R. from N. A.	Error of N. A.	Point observ-ed	N. P. D. from Observation.			N. P. D. from N. A.	Error of N. A.
1852.	d.	h.	m.	s.		h.	m.	s.	s.	s.		°	′	″	″	″
Sept.	22	20	55	49·5	2 L	9	4	20·96	21·10	+ 0·14	S L	75	33	11·04	9·58	— 1·46
	23	20	55	39·5	"	9	8	7·98	8·03	+ 0·05	"	75	42	45·02	41·72	— 3·30
	24	20	55	31·5	"	9	11	56·53	56·74	+ 0·21	"	75	52	46·91	43·44	— 3·47
	29	20	55	16·7	"	9	31	24·27	24·21	— 0·06	"	76	49	57·78	53·54	— 4·24
Oct.	4	20	55	33·7	"	9	51	24·67	24·56	— 0·11	"	77	58	46·35	44·22	— 2·13
	10	20	56	26·3	"	10	15	56·63	56·74	+ 0·11	"	79	35	60·94	59·80	— 1·14
	11	20	56	37·7	"	10	20	5·02	4·69	— 0·33	"	79	53	42·05	40·49	— 1·56
	12	20	56	49·9	"	10	24	13·81	13·25	— 0·56	"	80	11	48·35	45·07	— 3·28
	14	20	57	12·	—		——		—	—	"	80	49	0·38	4·29	+ 3·91
	15	20	57	29·3	"	10	36	42·79	42·33	— 0·46	"	81	8	19·33	18·98	— 0·35
	26	21	0	27·2	"	11	23	3·70	3·20	— 0·50	"	85	2	3·00	1·67	— 1·33
	29	21	1	24·5	"	11	35	50·55	49·77	— 0·78	"	86	11	51·44	52·04	+ 0·60
Nov.	7	21	4	36·3	"	12	14	31·69	30·90	— 0·79	"	89	52	53·86	49·19	— 4·67
	8	21	4	54·	—		——		—	—	"	90	18	10·32	10·92	+ 0 60
	15	21	7	57·1	"	12	49	25·78	25·38	— 0·40	"	93	18	22·67	19·94	— 2·73
	21	21	10	53·0	"	13	16	1·27	0·47	— 0·80	"	95	54	11·36	8·11	— 3·25
	24	21	12	30·1	"	13	29	28·24	27·61	— 0·63	"	97	11	39·31	37·28	— 2·03
Dec.	5	21	19	34·6	"	14	19	56·11	55·61	— 0·50	"	101	46	54·70	53·60	— 1·10
	6	21	20	18·7	"	14	24	37·23	36·89	— 0·34	"	102	10	49·89	49·88	— 0·01
	7	21	21	5·0	"	14	29	19·84	19·22	— 0·62	"	102	34	30·59	31·65	+ 1·06
	8	21	21	51·7	"	14	34	3·67	2·32	— 1·35	N L	102	57	57·33	56·67	— 0·66
	16	21	28	45·7	"	15	12	31·54	30·58	— 0·96	"	105	54	42·51	42·26	— 0·25

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF MARS.

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.			A. R. from N. A.	Error of N. A.	Point observ-ed	N. P. D. from Observation.			N. P. D. from N. A.	Error of N. A.
1848.	d.	h.	m.	s.		h.	m.	s.	s.	s.		°	′	″	″	″
Jan.	3	7	25	21·2	C	2	14	40·82	39·70	— 1·12	C	75	1	24·99	17·24	— 7·75
	4	7	22	41·0	"	2	15	56·62	55·48	— 1·14	"	74	53	67·11	59·72	— 7·39
	6	7	17	24·9	"	2	18	33·32	32·31	— 1·01	"	74	39	14 81	7·01	— 7·80
	7	7	14	50·3	"	2	19	54·35	53·30	— 1·05	"	74	31	41·19	33·94	— 7·25
	8	7	12	16·9	"	2	21	17·05	15·93	— 1·12	"	74	23	64·48	56·53	— 7·95
	10	7	7	14·3	"	2	24	7·00	6·05	— 0·95	"	74	8	36·39	29·46	— 6·93
	17	6	50	23·6	"	2	34	49·70	48·67	— 1·03	"	73	12	51·40	44·49	— 6·91
	18	6	48	4·7	"	2	36	27·10	26·02	— 1·08	"	73	4	44·00	37·44	— 6·56
	19	6	45	46·9	"	2	38	5·52	4·63	— 0·89	"	72	56	35·09	28·75	— 6·34
	20	6	43	31·4	2 L	2	39	45·59	44·59	— 1·00	"	72	48	25·50	18·76	— 6·74
	21	6	41	15·8	C	2	41	26·70	25·76	— 0·94	"	72	40	14·25	7·65	— 6·60
	22	6	39	2·1	"	2	43	9·16	8·16	— 1·00	"	72	31	60·15	55·69	— 4·46
	24	6	34	37·8	"	2	46	37·24	36·49	— 0·75	—		——		—	—
	25	6	32	28·0	"	2	48	23·48	22·37	— 1·11	"	72	7	23·49	16·68	— 6·81
	26	6	30	18·9	1 L	2	50	10·56	9·43	— 1·13	"	71	59	10·66	3·43	— 7·23
	27	6	28	10·5	C	2	51	58·46	57·63	— 0·83	"	71	50	55·73	50·27	— 5·46
	28	6	26	3·7	"	2	53	47·85	46·90	— 0·95	"	71	42	42·51	37·51	— 5·00
	29	6	23	57·8	"	2	55	38·21	37·26	— 0·95	"	71	34	30·41	25·36	— 5·05
	31	6	19	49·2	"	2	59	22·00	21·19	— 0·81	"	71	18	10·20	3·37	— 6·83
Feb.	1	6	17	46·3	1 L	3	1	15·53	14·73	— 0·80	"	71	9	60·40	53·99	— 6·41
	2	6	15	44·3	"	3	3	9·96	9·30	— 0·66	"	71	1	52·76	45·86	— 6·90
	3	6	13	43·9	"	3	5	5·72	4·88	— 0·84	"	70	53	47·22	39·29	— 7·93
	4	6	11	44·4	"	3	7	2·31	1·46	— 0·85	"	70	45	40·35	34·34	— 6·01
	5	6	9	45·6	"	3	8	59·81	59·03	— 0·78	"	70	37	37·21	31·28	— 5·93
	7	6	5	51·0	"	3	12	57·77	57·03	— 0·74	"	70	21	36·65	31·23	— 5·42

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF MARS, (Continued.)

Mean Solar Time of Observation.					Point observed.	A. R. from Observation.	A. R. from N. A	Error of N. A.	Point observed.	N. P. D from Observation.	N. P. D. from N. A.	Error of N. A.
1848.	d.	h.	m.	s.		h. m. s.	s.	s.		° ′ ″	″	″
Feb.	8	6	3	55·4	1 L	3 14 58·30	57·44	— 0·86	C	70 13 39·93	34·73	— 5·20
	10	6	0	6·8	"	3 19 1·85	0·96	— 0·89	"	69 57 55·33	49·64	— 5·69
	11	5	58	13·6	"	3 21 5·25	4·05	— 1·20	"	69 50 7·54	1·44	— 6·10
	12	5	56	21·5	"	3 23 9·00	7·99	— 1·01	"	69 42 22·21	16·23	— 5·98
1849.												
July	12	19	11	42·4	C	2 35 2·16	1·64	— 0·52				
	15	19	7	59·2	2 L	2 43 7·17	6·82	— 0·35	"	76 20 41·08	42·68	+ 1·60
	16	19	6	44·0	"	2 45 48·85	48·33	— 0·52	"	75 41 29·39	30 08	+ 0·69
									"	75 28 41·46	43·35	+ 1·89
Aug.	12	18	31	46·3	"	3 57 12·13	11·43	— 0·70	"	70 42 55·25	54·34	— 0·91
	16	18	26	15·3	"	4 7 27·05	26·15	— 0·90	"	70 10 36·45	36·16	— 0·29
	19	18	22	2·0	"	4 15 2·61	1·89	— 0·72	"	69 48 4·62	4·87	+ 0·25
	20	18	20	36·5	"	4 17 33·35	32·70	— 0·65	"	69 40 55·70	53·78	— 1·92
	21	18	19	10·8	"	4 20 3·85	2·91	— 0·94	"	69 33 54·51	52·33	— 2·18
Sept.	18	17	33	39·4	"	5 24 49·07	47·96	— 1·11	"	67 16 9·20	1·61	— 7·59
	19	17	31	47·0	"	5 26 52·34	51·44	— 0·90	"	67 12 61·73	54·68	— 7·05
	24	17	22	2·0	"	5 36 48·76	47·89	— 0·87	"	66 58 53·88	45·18	— 8·70
	26	17	17	8·2	"	5 40 36·89	36·11	— 0·78	"	66 53 48·89	41·17	— 7·72
	27	17	15	54·2	"	5 42 29·05	27·88	— 1·17	"	66 51 24·15	15 94	— 8·21
Oct.	8	16	51	10·2	"	6 1 3·59	2·40	— 1·19	"	66 28 37·62	25·66	—11·96
	12	16	41	11·3	"	6 6 49·37	48·22	— 1·15	"	66 21 24·91	11·99	—12·92
	16	16	30	36·2	"	6 11 58·37	57·08	— 1·29	"	66 14 19·76	7·78	—11·98
	22	16	13	26·4	"	6 18 25·34	23·97	— 1·37	"	66 3 28·60	14·34	—14·26
	23	16	10	25·2	"	6 19 20·22	18·91	— 1·31	"	66 1 29·82	20·36	— 9·46
	26	16	1	4·0	"	6 21 47·55	46·36	— 1·19	"	65 55 40·74	25·39	—15·35
	28	15	54	36·4	"	6 23 11·23	9·71	— 1·52	"	65 51 28·70	15·68	—13·02
	31	15	44	29·7	"	6 24 52·78	51·23	— 1·55	"	65 44 53·89	38·00	—15·89
Nov.	1	15	41	1·1	"	6 25 20·18	18·59	— 1·59	"	65 42 33·93	18·58	—15·35
	6	15	22	46·7	"	6 26 45·31	44·14	— 1·17	"	65 29 62·25	45·47	—16·78
	19	14	28	9·6	"	6 23 14·88	13 38	— 1·50	"	64 49 77·92	57·68	—20·24
	20	14	23	31·0	"	6 22 31·95	30·31	— 1·64	"	64 46 54·69	34·72	—19·97
	21	14	18	48·3	"	6 21 44·98	43·48	— 1·50	"	64 43 29·37	10·39	—18·98
	22	14	14	2·3	"	6 20 54·66	52·92	— 1·74	"	64 39 64·88	45·08	—19·80
	23	14	9	12·	—	——	—	—	"	64 36 39·24	19·36	—19·88
	25	13	59	29·1	1 & 2	6 18 0·98	59·36	— 1·62	"	64 29 48·55	28·05	—20·50
	28	13	44	8·5	"	6 14 35·83	34·44	— 1·39	"	64 19 39·47	19·06	—20·41
	29	13	38	58·0	"	6 13 21·03	19·55	— 1·48	"	64 16 19·07	0·07	—19·00
Dec.	2	13	23	8·6	"	6 9 18·44	16·64	— 1·80	"	64 6 45·02	22·95	—22·07
	10	12	39	6·2	"	5 56 41·95	40·18	— 1·77	"	63 44 63·24	43·53	—19·71
	11	12	33	28·4	"	5 54 59·37	57·60	— 1·77	"	63 42 52·88	33·91	—18·97
	12	12	27	49·2	"	5 53 15·73	13·99	— 1·74	"	63 40 53·65	33·26	—20·39
	13	12	22	9·2	"	5 51 31·37	29·56	— 1·81	"	63 38 61·42	42·72	—18·70
	17	11	59	25·1	"	5 44 29·71	28·33	— 1·38	"	63 32 66·01	48·19	—17·82
	18	11	53	45·2	"	5 42 45·28	43·04	— 2·24	"	63 31 61·72	43·32	—18·40
	19	11	48	4·1	"	5 40 60·19	58·54	— 1·65	"	63 30 65·58	47·98	—17·60
	20	11	42	24·8	"	5 39 16·38	14·84	— 1·54	"	63 30 18·58	1·82	—16·76
	21	11	36	47·1	"	5 37 34·02	32·18	— 1·84	"	63 29 42·01	24·64	—17·37
	27	11	3	30·	—	——	—	—	"	63 28 52·51	36·69	—15·82
	29	10	52	42·	—	——	—	—	"	63 29 34·13	18·85	—15·28
1850.												
Jan.	2	10	31	35·3	C	5 19 30·50	28·85	— 1·65	"	63 31 65·41	49·56	—15·85
	3	10	26	26·2	1 & 2	5 18 17·16	15·61	— 1·55	"	63 32 54·05	38·43	—15·62

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF MARS, *(Continued.)*

Mean Solar Time of Observation.					Point observed.	A. R. from Observation.	A. R. from N. A.	Error of N. A	Point observed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1850.	d.	h.	m.	s.		h. m. s.	s.	s.		° ′ ″	″	″
Jan.	5	10	16	17·9	1 & 2	5 15 60·37	58·71	— 1·66	C	63 34 41·80	26·23	—15·57
	9	9	56	41·0	"	5 12 6·68	5·35	— 1·33	"	63 38 44·26	29·20	—15·06
	10	9	51	56·3	C	5 11 17 13	15·79	— 1 34	"	63 39 47·12	33·11	—14·01
	11	9	47	14·5	"	5 10 31·13	29·81	— 1·32	"	63 40 52·85	37·44	—15·41
	14	9	33	31·0	"	5 8 34·97	33·76	— 1·21	"	63 43 62·24	49·08	—13·16
	15	9	29	2·8	1 & 2	5 8 3·31	2·38	— 0·93	"	63 44 64·32	51·39	—12·93
	16	9	24	39·5	C	5 7 35·83	34·66	— 1·17	"	63 45 66·04	52·45	—13·59
	17	9	20	19·9	"	5 7 11·80	10·59	— 1·21	"	63 46 65·74	51·89	—13·85
	18	9	16	3·6	"	5 6 51·38	50 16	— 1·22	"	63 47 62·70	49·38	—13·32
	21	9	3	36·4	"	5 6 11·89	10·36	— 1·53	"	63 50 42·02	29·14	—12·88
	22	8	59	36·	—	——	—	—	"	63 51 29·89	17·62	—12·27
	23	8	55	36·	—	——	—	—	"	63 52 15·48	3·49	—11·99
	24	8	51	42·	—	——	—	—	"	63 52 58·88	46·65	—12·23
	25	8	47	48·5	1 & 2	5 6 7·21	5·99	— 1·22	"	63 53 37·06	27·07	— 9·99
	26	8	43	59·4	"	5 6 14·48	13·28	— 1·20	"	63 54 16·66	4·76	—11·90
	28	8	36	32·0	"	5 6 38·77	37·55	— 1·22	"	63 55 22·92	12·13	—10·79
	29	8	32	52·9	"	5 6 55·50	54·42	— 1·08	"	63 55 53·85	41·69	—12·16
	30	8	29	16·6	"	5 7 15·40	14·35	— 1·05	"	63 56 19·60	8·70	—10·90
	31	8	25	43·9	"	5 7 38·29	37·43	— 0·86	"	63 56 44·02	33·21	—10·81
Feb.	1	8	22	13·8	C	5 8 4·42	3·27	— 1·15	"	63 56 66·12	55·14	—10·98
	2	8	18	47·0	"	5 8 33·43	32·15	— 1·28	"	63 57 27·55	14·68	—12·87
	4	8	12	1·2	"	5 9 39·71	38·48	— 1·23	"	63 57 57·70	46·87	—10·83
	5	8	8	42·8	"	5 10 16·96	15·82	— 1·14	"	63 57 70·45	59·69	—10·76
	6	8	5	26·6	"	5 10 57·01	55·90	— 1·11	"	63 58 22·00	10·55	—11·45
	7	8	2	13·2	"	5 11 39·74	38·64	— 1·10	"	63 58 30·01	19·51	—10·50
	8	7	59	2·3	"	5 12 25·12	24·01	— 1·11	"	63 58 37·09	26·72	—10·37
	12	7	46	45·2	"	5 15 51·88	50·80	— 1·08	"	63 58 50·78	41·71	— 9·07
	13	7	43	46·7	"	5 16 49·46	48·57	— 0·89	"	63 58 50·58	41·32	— 9·26
	14	7	40	50·5	"	5 17 49·46	48·66	— 0·80	"	63 58 50·11	41·03	— 9·08
	15	7	37	56·8	"	5 18 51·83	51·01	— 0·82	"	63 58 51·11	39·97	—11·14
	16	7	35	5·5	"	5 19 56·48	55·60	— 0·88	"	63 58 47·95	38·32	— 9·63
	18	7	29	29·0	"	5 22 12·05	11·23	— 0·82	"	63 58 43·79	34·10	— 9·69
	19	7	26	43·6	"	5 23 23·08	22·16	— 0·92	"	63 58 39·96	31·92	— 8·04
	21	7	21	19·1	"	5 25 50·92	50·01	— 0·91	"	63 58 37·91	28·28	— 9·63
	22	7	18	40·3	"	5 27 7·83	6·82	— 1·01	"	63 58 37·08	27·24	— 9·84
	23	7	16	2·4	"	5 28 26·38	25·53	— 0·85	"	63 58 36·39	27·02	— 9·37
	25	7	10	53·5	"	5 31 9·24	8·27	— 0·97	"	63 58 38·82	29·79	— 9·03
	26	7	8	20·7	"	5 32 33·08	32·25	— 0·83	"	63 58 41·86	33·09	— 8·77
	27	7	5	50·1	"	5 33 58·83	57·91	— 0·92	"	63 58 44·44	37·91	— 6·53
	28	7	3	21·6	"	5 35 26·01	25·20	— 0·81	"	63 58 51·72	44·53	— 7·19
Mar.	1	7	0	53·7	1 L	5 36 54·70	54·09	— 0·61	"	63 58 59·13	53·06	— 6·07
	2	6	58	27·9	"	5 38 25·22	24·53	— 0·69	"	63 59 10·36	3·70	— 6·66
	4	6	53	41·3	"	5 41 30·60	29·98	— 0·62	"	63 59 37·26	31·97	— 5·29
	5	6	51	19·8	"	5 43 5·42	4·90	— 0·52	"	63 59 58·19	49·91	— 8·28
	6	6	49	0·1	C	5 44 41·81	41·25	— 0·56	"	64 0 17·67	10·65	— 7·02
	7	6	46	41·6	1 L	5 46 19·50	19·00	— 0·50	"	64 0 41·75	34·40	— 7·35
	8	6	44	24·6	"	5 47 58·69	58·10	— 0·59	"	64 1 8·27	1·24	— 7·03
	9	6	42	8·5	"	5 49 38·99	38·56	— 0·43	"	64 1 38·59	31·29	— 7·30
	11	6	37	41·3	"	5 53 3·83	3·34	— 0·49	"	64 2 48·09	41·87	— 6·22
	12	6	35	29·5	"	5 54 48·15	47·60	— 0·55	"	64 3 29·44	22·70	— 6·74
	13	6	33	18·7	C	5 56 33·47	33·09	— 0·38	"	64 4 12·89	7·36	— 5·53
	14	6	31	9·5	"	5 58 20·38	19·78	— 0·60	"	64 4 62·51	56·07	— 6·44
	15	6	29	1·2	"	6 0 8·17	7·62	— 0·55	"	64 5 54·40	48·89	— 5·51
	18	6	22	42·4	"	6 5 38·13	37·74	— 0·39	"	64 8 59·62	53·63	— 5·99
	19	6	20	38·5	1 L	6 7 30·34	29·89	— 0·45	"	64 10 12·33	4·43	— 7·90

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF MARS, *(Continued.)*

Mean Solar Time of Observation.					Point observed	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1850.	*d.*	*h.*	*m.*	*s.*		*h m. s.*	*s.*	*s.*		° ′ ″	″	″
Mar.	20	6	18	35·3	1 L	6 9 23·52	23·04	— 0·48	C	64 11 27·16	20·02	— 7·14
	21	6	16	33·2	„	6 11 18·17	17·15	— 1·02	„	64 12 46·38	40·50	— 5·88
	25	6	8	33·6	„	6 19 3·47	2·75	— 0·72	„	64 18 60·46	54·92	— 5·54
	26	6	6	36·2	„	6 21 2·10	1·29	— 0·81	„	64 20 47·47	42·27	— 5·20
	27	6	4	39·2	„	6 23 1·36	0·62	— 0·74	„	64 22 40·61	35·19	— 5·42
	28	6	2	43·3	C	6 25 0·96	0·74	— 0·22	—	—	—	—
May	16	4	37	47·2	„	8 13 2·63	2·04	— 0·59	—	—	—	—
	27	4	19	54 3	„	8 38 28·14	27·81	— 0 33	—	—	—	—
1851.												
Feb.	18	22	55	29·5	„	20 30 4·78	4·32	— 0·46	—	—	—	—
	24	22	47	5·6	„	21 5 1·99	1·36	— 0·63	„	107 49 14·82	21·14	+ 6·32
	25	22	46	17·8	„	21 8 10·25	9·70	— 0·55	„	107 36 1·23	6·55	+ 5·32
	26	22	45	29·4	„	21 11 18·31	17·65	— 0·66	„	107 22 35·68	40·98	+ 5·30
June	24	20	41	16·0	„	2 51 56·66	56·30	— 0·36	—	—	—	—
July	7	20	27	18·1	„	3 29 12·41	12·06	— 0·35	„	71 44 18·77	18·51	— 0·26
	21	20	12	25·8	„	4 9 29·52	28·98	— 0·54	„	69 28 35·12	33·00	— 2·12
Aug.	10	19	50	49·2	„	5 6 40·57	40·60	+ 0·03	„	66 19 35·41	31·03	— 4·38
	17	19	42	57·2	„	5 26 23·19	22·82	— 0·37	„	66 52 35·78	29·74	— 6·04
	18	19	41	48·6	„	5 29 11·05	10·54	— 0·51	„	66 49 31·61	24·10	— 7·51
	31	19	26	19·7	„	6 4 54·47	54·18	— 0·29	„	66 25 23·29	15·83	— 7·46
Sep.	2	19	23	49·5	„	6 10 17·17	16·80	— 0·37	„	66 24 13·77	7·51	— 6·26
	4	19	21	16·7	„	6 15 37·31	37·21	— 0·10	„	66 23 45·94	37·95	— 7·99
	11	19	12	5·5	„	6 34 0·40	0·18	— 0·22	—	—	—	—
	12	19	10	44·8	„	6 36 35·33	35·23	— 0·10	„	66 27 55·51	47·32	— 8·19
	16	19	5	13·2	2 L	6 46 49 52	48·78	— 0·74	„	66 33 25·19	16·90	— 8·20
	18	19	2	22·8	„	6 51 51·79	51·28	— 0·51	„	66 36 57·62	49·00	— 8·62
	19	19	0	56·7	„	6 54 21·81	21·31	— 0·50	„	—	—	—
	21	18	58	2·1	„	6 59 19·83	19·33	— 0·50	„	—	—	—
	22	18	56	33·1	„	7 1 47·64	47·10	— 0·54	„	—	—	—
	28	18	47	24·4	„	7 16 16·24	15·92	— 0·32	„	—	—	—
1852.												
Jan.	2	14	14	30·	—	—	—	—	„	68 56 21·60	1·25	—20·35
	6	13	54	30·	—	—	—	—	„	68 29 41·43	22·40	—19·03
	8	13	44	17·8	C	8 54 28·48	27·67	— 0·81	„	68 15 43·11	23·64	—19·47
	10	13	33	49·6	„	8 51 51·89	50·74	— 1·15	S L	68 1 30·79	7·76	—23·03
	15	13	6	57·7	„	8 44 38·12	37·00	— 1·12	N L	67 25 17·70	0·01	—17·69
	16	13	1	24·	—	—	—	—	S L	67 17 70·17	49·41	—20·76
	17	12	55	58·8	„	8 41 30·64	29·68	— 0·96	N L	67 10 58·71	42·00	—16·71
	19	12	44	53·5	1 L	8 38 17 48	16·43	— 1·05	„	66 56 56·76	41·03	—15·73
	20	12	39	20·3	C	8 36 39·10	38·43	— 0·67	S L	66 49 72·76	51·00	—21·76
	21	12	33	45·4	„	8 34 59·88	58·73	— 1·15	„	66 43 24·87	4·64	—20·23
	22	12	28	9·7	„	8 33 19·89	18·74	— 1·15	„	66 36 50·06	27·97	—22·09
	23	12	22	33·6	„	8 31 39·41	38·26	— 1·15	N L	66 30 14·71	0·07	—14·64
	24	12	16	56·9	„	8 29 58·38	57·47	— 0·91	S L	66 23 61·50	41·69	—19·81
	26	12	5	44·3	„	8 26 36·99	35·91	— 1·08	„	66 11 56·55	36·62	—19·93
	27	12	0	8·5	„	8 24 56·68	55·54	— 1·14	N L	66 5 65·77	51·53	—14·24
	28	11	54	33·1	„	8 23 16·89	15·69	— 1·20	S L	66 0 41·10	18·49	—22·61
	29	11	48	58·4	„	8 21 37·70	36·57	— 1·13	N L	65 54 68·58	58·18	—10·40
	30	11	43	24·2	„	8 19 59·43	58·40	— 1·03	S L	65 49 71·20	51·03	—20·17
	31	11	37	51·5	„	8 18 22·47	21·35	— 1·12	N L	65 44 71·28	57·44	—13·84

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF MARS, (*Continued.*)

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1852.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Feb.	2	11	26	50·0	C	8 15 12·74	11·34	— 1·40	S L	65 35 69·37	52·49	—16·88
	3	11	21	21·6	»	8 13 40·03	38·71	— 1·32	N L	65 31 52·93	41·52	—11·41
	4	11	15	54·8	»	8 12 8·99	7·88	— 1·11	S L	65 27 61·61	46·05	—15·56
	5	11	10	30·2	»	8 10 39·97	39·02	— 0·95	N L	65 24 13·65	3·18	—10·47
	6	11	5	7·6	»	8 9 13·24	12·28	— 0·96	S L	65 20 52·69	36·23	—16·46
	7	10	59	47·9	»	8 7 49·02	47·71	— 1·31	N L	65 17 36·91	23·90	—13·01
	9	10	49	14·5	»	8 5 6·95	5·88	— 1·07	S L	65 11 54·36	43·20	—11·16
	10	10	44	2·5	»	8 3 50·22	48·82	— 1·40	N L	65 9 31·02	14·75	—16·27
	11	10	38	51·5	»	8 2 35·52.	34·47	— 1·05	N L	65 7 13·22	0·74	—12·48
	12	10	33	44·0	»	8 1 23·76	22·96	— 0·80	S L	65 5 15·64	1·01	—14·63
	13	10	28	42·	»	——	—	—	N L	65 3 25·68	15·30	—10·38
	14	10	23	38·6	»	7 59 9·69	8·86	— 0·83	S L	65 1 59·23	43·36	—15·87
	16	10	13	45·3	»	7 57 7·87	6·88	— 0·99	S L	64 59 34·18	20·12	—14·06
	17	10	8	53·4	»	7 56 11·62	10·74	— 0·88	N L	64 58 36·85	28·24	— 8·61
	19	9	59	19·8	»	7 54 29·15	28·32	— 0·83	N L	64 57 32·63	22·60	—10·03
	20	9	54	38·0	»	7 53 43·08	42·18	— 0·90	C	64 57 18·85	8·18	—10·67
	21	9	49	59·3	»	7 53 0·16	59·29	— 0·87	N L	64 57 13·37	5·61	— 7·76
	23	9	40	52·4	»	7 51 44·93	43·98	— 0·95	N L	64 57 42·97	34·90	— 8·07
	24	9	36	24·1	»	7 51 12·42	11·44	— 0·98	S L	64 58 17·02	6·14	—10·88
	25	9	31	58·5	»	7 50 43·03	42·54	— 0·49	N L	64 58 53·94	47·98	— 5·96
	26	9	27	37·0	»	7 50 17·53	16·68	— 0·85	S L	64 59 51·30	40·19	—11·11
	27	9	23	19·2	»	7 49 55·52	54·40	— 1·12	»	65 0 53·05	42·38	—10·67
	28	9	19	4·1	»	7 49 36·02	35·50	— 0·52	»	65 1 66·31	54·29	—12·02
Mar.	1	9	10	45·0	»	7 49 8·34	7·74	— 0·60	C	65 4 54·87	46·29	— 8·58
	2	9	6	40·4	»	7 48 59·56	58·80	— 0·76	»	65 6 34·43	25·72	— 8·71
	3	9	2	38·8	»	7 48 53·95	53·09	— 0·86	»	65 8 20·86	13·85	— 7·01
	4	8	58	40·4	»	7 48 51·32	50·59	— 0·73	»	65 10 18·36	10·40	— 7·96
	6	8	50	53·9	»	7 48 55·80	55·00	— 0·80	»	65 14 34·24	24·01	—10·23
	8	8	43	18·0	»	7 49 12·35	11·76	— 0·59	»	65 19 22·28	16·34	— 5·94
	9	8	39	34·6	»	7 49 25·31	24·67	— 0·64	»	65 21 58·47	52·79	— 5·68
	10	8	35	54·6	»	7 49 41·00	40·18	— 0·82	»	65 24 42·73	35·97	— 6·76
	11	8	32	16·7	»	7 49 59·50	58·78	— 0·72	»	65 27 33·43	26·29	— 7·14
	12	8	28	42·2	»	7 50 21·01	20·19	— 0·82	»	65 30 29·60	23·69	— 5·91
	13	8	25	10·4	»	7 50 45·09	44·39	— 0·70	»	65 33 33·83	28·13	— 5·70
	15	8	18	15·3	»	7 51 41·89	40·90	— 0·99	»	65 39 61·80	57·40	— 4·40
	16	8	14	51·6	»	7 52 14·13	13·12	— 1·01	»	65 43 27·27	22·03	— 5·24
	17	8	11	30·3	»	7 52 49·05	47·95	— 1·10	»	65 46 59·69	53·32	— 6·37
	20	8	1	41·9	»	7 54 48·02	47·40	— 0·62	»	65 58 10·17	5·90	— 4·27
	22	7	55	21·6	»	7 56 19·84	19·05	— 0·79	—	——	—	—
	23	7	52	14·3	»	7 57 8·94	8·34	— 0·60	»	66 10 24·04	15·55	— 8·49
	26	7	43	6·	»	——	—	—	»	66 23 25·53	21·40	— 4·13
	27	7	40	9·1	»	8 0 47·74	47·17	— 0·57	—	——	—	—
	29	7	34	18·6	»	8 2 49·33	48·88	— 0·45	—	——	—	—
	30	7	31	26·0	»	8 3 52·88	52·60	— 0·28	»	66 42 19·27	15·31	— 3·96
	31	7	28	36·0	»	8 4 58·77	58·20	— 0·57	—	——	—	—
April	1	7	25	46·9	»	8 6 5·98	5·59	— 0·39	—	——	—	—
	2	7	22	59·7	»	8 7 14·96	14·71	— 0·25	—	——	—	—
	3	7	20	14·7	»	8 8 25·81	25·56	— 0·25	—	——	—	—
	14	6	51	36·8	»	8 23 5·75	5·34	— 0·41	—	——	—	—
Oct.	27	1	17	17·4	»	15 40 36·63	35·82	— 0·81	—	——	—	—
	28	1	16	18·9	»	15 43 34·59	33·94	— 0·65	—	——	—	—
	29	1	15	21·5	»	15 46 33·33	32·71	— 0·62	»	110 26 31·35	35·98	+ 4·63

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF VESTA.

Mean Solar Time of Observation.	d.	h.	m.	s.	Point observed.	A. R. from Observation. h. m. s.	A. R. from N. A. s.	Error of N. A. s.	Point observed.	N. P. D. from Observation. ° ′ ″	N. P. D. from N. A. ″	Error of N. A. ″
1848. Sept.	20	12	7	21·4	C	0 6 28·47	29·88	+ 1·41	C	102 5 54·25	46·73	— 7·52
Oct.	17	9	59	36·8	”	23 44 49·40	50·59	+ 1·19	”	103 46 43·61	38·69	— 4·92
Nov.	20	7	42	4·0	”	23 40 56·87	58·03	+ 1·16	”	102 5 40·25	39·89	— 0·36
	22	7	34	54·7	”	23 41 39·41	40·32	+ 0·91	”	101 53 29·31	29·68	+ 0·37
1849. Nov.	25	15	38	50·1	”	7 57 46·42	47·73	+ 1·31	”	70 1 34·98	52·02	+17·04
Dec.	2	15	10	18·6	”	7 56 46·06	47·80	+ 1·74	”	69 42 41·66	60·32	+18·66
	10	14	35	50·9	”	7 53 45·77	47·43	+ 1·66	”	69 14 12·63	32·77	+20·14
	12	14	26	55·7	”	7 52 41·63	43·25	+ 1·62	”	69 6 1·95	20·81	+18·86
	13	14	22	25·2	”	7 52 7·05	8·64	+ 1·59	”	69 1 46·82	65·81	+18·99
1850. Jan.	10	12	6	45·5	”	7 26 28·50	30·85	+ 2·35	”	66 39 32·49	52·16	+19·67
	11	12	1	43·2	”	7 25 21·95	24·16	+ 2·21	”	66 34 21·69	41·67	+19 98
	14	11	46	36·0	”	7 22 1·83	4·20	+ 2·37	”	66 19 8·45	27·75	+19·30
	16	11	36	31·7	”	7 19 49·67	51·91	+ 2·24	”	66 9 16 67	35·83	+19·16
	17	11	31	30·6	”	7 18 44·12	46·33	+ 2·21	”	66 4 25·81	45·78	+19·97
	18	11	26	29·8	”	7 17 39·02	41·25	+ 2·23	”	65 59 39·94	60·01	+20 07
	21	11	11	30·9	”	7 14 27·38	29·87	+ 2·49	”	65 45 52·65	70·07	+17·42
	22	11	6	34·	—	——	—	—	—	65 41 25·07	42·95	+17·88
	25	10	51	45·4	”	7 10 24·49	26·59	+ 2·10	”	65 28 33·66	52·26	+18·60
	26	10	46	50·9	”	7 9 26·15	28·40	+ 2·25	”	65 24 27·90	45·94	+18·04
	28	10	37	6·8	”	7 7 33·42	35·60	+ 2·18	”	65 16 32·33	49·58	+17·25
	29	10	32	16·7	”	7 6 38·96	41·14	+ 2·18	”	65 12 41·05	59·74	+18·69
	31	10	22	40·5	”	7 4 54·15	56·37	+ 2·22	”	65 5 20·28	36·72	+16·44
Feb.	1	10	17	54·4	”	7 4 4·04	6·19	+ 2·15	”	65 1 48·00	63·67	+15·67
	2	10	13	10·0	”	7 3 15·23	17·51	+ 2·28	”	64 58 19·95	36·30	+16·35
	4	10	3	45·8	”	7 1 42·72	44·98	+ 2·26	”	64 51 43·81	58·47	+14·66
	5	9	59	6·6	”	7 0 58·90	61·22	+ 2·32	”	64 48 32·67	48·02	+15·35
	6	9	54	28·6	”	7 0 16·95	19·16	+ 2·21	”	64 45 28·79	43·18	+14·39
	18	9	1	20·7	”	6 54 18·87	20·81	+ 1·94	”	64 15 35·25	46·78	+11·53
	19	8	57	7·5	”	6 54 1·78	3·80	+ 2·02	”	64 13 37·51	50·22	+12·71
	21	8	48	47·7	”	6 53 33·85	35·85	+ 2·00	”	64 10 0·23	11·30	+11·07
	22	8	44	41·3	”	6 53 23·01	24·90	+ 1·89	”	64 8 17·55	28·80	+11·25
	25	8	32	33·1	”	6 53 2·27	4·13	+ 1·86	”	64 3 3?·75	48·30	+11·55
	26	8	28	33·7	”	6 52 59·27	61·19	+ 1·92	”	64 2 13 44	23·71	+10·27
	27	8	24	36·7	”	6 52 58·31	60·25	+ 1·94	”	64 0 52·80	63·38	+10·58
	28	8	20	42·3	”	6 52 59·45	61·28	+ 1·83	”	63 59 35·27	47·32	+12·05
Mar.	1	8	16	49·2	”	6 53 2·41	4·25	+ 1·84	”	63 58 24·77	35·57	+10·80
	2	8	12	57·9	”	6 53 7·24	9·17	+ 1·93	”	63 57 17·12	27·97	+10·85
	4	8	5	22·2	”	6 53 22·95	24·81	+ 1·86	”	63 55 15·24	25·03	+ 9·79
	5	8	1	36·9	”	6 53 33·75	35·48	+ 1·73	”	63 54 18·95	29·72	+10·77
	6	7	57	53·1	”	6 53 46·17	48·05	+ 1·88	”	63 53 27·47	38·42	+10·95
	23	6	59	7·8	”	7 1 52·21	53·68	+ 1·47	”	63 48 50·10	64·57	+14·47
	25	6	52	43·3	”	7 3 20·15	21·74	+ 1·59	”	63 49 29·04	37·08	+ 8·04
	27	6	46	25·4	”	7 4 54·13	55·63	+ 1·50	”	——	—	—
	28	6	43	18·6	”	7 5 42·86	44·66	+ 1·80	”	63 50 56·83	64·41	+ 7·58
1851. Mar.	18	17	28	17·7	”	17 12 5·12	8·24	+ 3·12	”	106 3 9·81	9·55	— 0·26
	28	16	59	11·	—	——	—	—	”	106 5 35·28	35·09	— 0·19
	31	16	49	59·0	”	17 24 55·38	58·91	+ 3·53	”	——	—	—

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF VESTA, (*Continued.*)

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1851.	d.	h.	m.	s.		h. m. s.	s.	s.		° ′ ″	″	″
April	1	16	46	52·5	C	17 25 44·39	48·05	+ 3·66	C	106 5 39·28	37·61	— 1·67
	3	16	40	33·0	„	17 27 17·53	21·60	+ 4·07	„	106 5 32·10	31·08	— 1·02
	4	16	37	21·6	„	17 28 2·36	5·95	+ 3·59	„	106 5 27·54	26·37	— 1·17
	6	16	30	53·5	„	17 29 25·72	29·72	+ 4·00	„	106 5 18·70	14·83	— 3·87
	7	16	27	36·4	„	17 30 5·20	9·12	+ 3·92	„	106 5 11·11	8·23	— 2·88
	8	16	24	17·6	„	17 30 42·42	46·81	+ 4·39	„	106 5 3·21	1·36	— 1·85
	9	16	20	57·9	„	17 31 18·75	22·77	+ 4·02	„	106 4 56·89	54·29	— 2·60
	10	16	17	36·3	„	17 31 52·78	57·00	+ 4·22	„	106 4 49·18	47·72	— 1·46
	11	16	14	12·9	„	17 32 25·60	29·48	+ 3·88	„	106 4 43·87	40·13	— 3·74
	14	16	3	51·2	„	17 33 52·17	56·19	+ 4·02	„	106 4 25·29	21·12	— 4·17
	15	16	0	20·3	„	17 34 17·14	21·45	+ 4·31	„	106 4 21·21	15·95	— 5·26
	16	15	56	48·0	„	17 34 40·69	44·83	+ 4·14	„	106 4 15·38	11·56	— 3·82
	21	15	38	36·	—	——	—	—	„	106 4 10·77	6·79	— 3·98
	22	15	34	52·1	„	17 36 20·12	25·00	+ 4·88	„	106 4 14·94	10·21	— 4·73
	24	15	27	17·9	„	17 36 37·93	42·59	+ 4·66	„	106 4 27·95	22·28	— 5·67
	25	15	23	27·4	„	17 36 43·66	48·35	+ 4·69	„	106 4 35·82	31·30	— 4·52
May	7	14	34	45·5	„	17 35 11·75	17·09	+ 5·34	„	106 9 47·49	40.80	— 6·69
	8	14	30	29·4	„	17 34 51·23	56·22	+ 4·99	„	106 10 32·21	26·89	— 5·32
	9	14	26	10·6	„	17 34 28·48	33·38	+ 4·90	„	106 11 22·86	16·58	— 6·28
	11	14	17	26·2	„	17 33 36·18	41·76	+ 5·58	„	106 13 12·39	6·96	— 5.43
	13	14	8	36·3	„	17 32 37·35	42·61	+ 5·26	„	106 15 16·93	12·42	— 4·51
	15	13	59	37·2	„	17 31 30·23	35·96	+ 5·73	„	106 17 40·20	33·37	— 6·83
	18	13	45	56·3	„	17 29 36·99	42·52	+ 5·53	„	106 21 41·37	34·4[illegible]	— 6·90
	22	13	27	19·0	„	17 26 42·33	47·83	+ 5·50	„	106 27 58·08	52·35	— 5·73
	27	13	3	28·5	„	17 22 30·78	36·37	+ 5·59	„	106 37 23·70	15·35	— 8·35
	28	12	58	38·5	„	17 21 36·62	42·32	+ 5·70	„	106 39 27·32	20·02	— 7·30
	29	12	53	47·5	„	17 20 41·77	47·17	+ 5·40	„	——	—	—
	30	12	48	55·5	„	17 19 45·11	51·01	+ 5·90	„	106 43 45·01	41·19	— 3·82
June	1	12	37	8·8	„	17 17 50·07	56·03	+ 5·96	„	106 48 25·54	18·28	— 7·26
	12	11	44	49·6	„	17 6 43·60	49·78	+ 6·18	„	107 18 17·33	10·53	— 6·80
	18	11	15	15·5	„	17 0 44·59	50·31	+ 5·72	„	107 37 28·63	23·39	— 5·24
1852.												
Nov.	24	10	14	15·7	„	2 29 26·27	28·11	+ 1·84	„	85 7 55·82	63·19	+ 7·37
Dec.	9	9	6	9·3	„	2 20 17·02	18·82	+ 1·80	„	84 52 22·73	31·47	+ 8·74
	10	9	1	49·4	„	2 19 52·94	54·66	+ 1·72	„	84 50 3·78	11·26	+ 7·48
	11	8	57	30·5	„	2 19 30·60	32·16	+ 1·56	„	84 47 33·61	42·16	+ 8·55

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF JUNO.

1848.	d.	h.	m.	s.		h. m. s.	s.	s.		° ′ ″	″	″
Dec.	20	11	26	58·5	C	5 24 45·49	60·65	+15·16	C	91 13 13·11	17·03	+ 3·92
	22	11	17	30·2	„	5 23 8·54	23·61	+15·07	„	91 6 59·96	65·07	+ 5·11
1849.												
Jan.	11	9	47	16·0	„	5 11 30·32	41·76	+11·44	„	89 2 18·34	28·53	+10·19
1850.												
April	8	12	14	6·1	„	13 20 47·47	50·51	+ 3·04	„	88 53 8·86	29·91	+21·05
	11	11	59	57·4	„	13 18 25·75	28·87	+ 3·12	„	——	—	—
	17	11	31	43·6	„	13 13 46·50	49·70	+ 3·20	„	——	—	—
	20	11	17	42·	„	——	—	—	„	87 27 57·82	74·46	+16·64

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF JUNO, (*Continued*)

Mean Solar Time of Observation.	Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1850. *d. h. m. s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
May 2 10 22 27·2	C	13 3 27·44	29·93	+ 2·49	C	86 22 15·41	28·45	+13·04
1852.								
Oct. 5 11 6 41·2	”	0 4 53·06	72·64	+19·58	”	96 3 87·22	23·70	—63·52
6 11 2 7·1	”	0 4 15·78	35·35	+19·57	”	96 15 103·60	42·89	—60·71
11 10 39 34·3	”	0 1 21·01	40·18	+19·17	”	97 14 78·54	17·87	—60·67
13 10 30 39·6	”	0 0 17·51	36·64	+19·13	”	97 36 64·98	6·91	—58·07
14 10 26 13·5	”	23 59 47·54	66·58	+19·04	”	97 46 93 81	38·31	—55·50
15 10 21 48·8	”	23 59 18·52	37·70	+19·18	”	97 56 108·26	53·49	—54·77
23 9 47 20·9	”	23 56 17·52	36·19	+18·67	”	99 8 73·30	23·83	—49·47
25 9 38 59·7	”	23 55 47·78	65·82	+18·04	”	99 23 56·83	10·63	—46·20
27 9 30 43·8	”	23 55 24·10	42·22	+18·12	”	99 36 84·11	40·23	—43·88
29 9 22 36·0	”	23 55 7·83	25·39	+17·56	”	99 48 94·44	51·77	—42·67

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF PALLAS.

Mean Solar Time of Observation.	Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1848. *d. h. m. s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Mar. 1 12 5 34·9	C	10 44 21·09	19·61	— 1·48	C	94 53 22·67	64·87	+42·20
2 12 0 57·7	”	10 43 39·78	38·13	— 1·65	”	94 27 46·74	89·83	+43·09
3 11 56 21·0	”	10 42 58·67	56·90	— 1·77	”	94 2 4·47	46·44	+41·97
4 11 51 44·1	”	10 42 17·65	15·92	— 1·73	”	93 36 12·85	56·16	+43·31
6 11 42 31·6	”	10 40 56·65	55·20	— 1·45	”	92 44 18·31	61·00	+42·69
7 11 37 56·2	”	10 40 17·02	15·57	— 1·45	”	92 18 16·61	59·06	+42·45
8 11 33 21·5	”	10 39 38·01	36·52	— 1·49	”	91 52 14·29	56·17	+41·88
9 11 28 47·5	”	10 38 59·79	58·16	— 1·63	”	91 26 10·85	53·83	+42·98
10 11 24 13·9	”	10 38 22·01	20·55	— 1·46	”	91 0 13·63	53·56	+39·93
11 11 19 41·2	”	10 37 45·30	43·70	— 1·60	”	90 34 13·12	57·17	+44·05
14 11 6 8·8	”	10 35 60·08	58·64	— 1·44	”	89 17 1·72	41·85	+40·13
15 11 1 39·9	”	10 35 27·06	25·59	— 1·47	”	88 51 30·74	72·87	+42·13
16 10 57 12·2	”	10 34 55·09	53·65	— 1·44	”	88 26 11·24	53·96	+42·72
18 10 48 19·9	”	10 33 54·75	53·21	— 1·54	”	87 36 8·43	51·40	+42·97
20 10 39 32·5	”	10 32 58·97	57·64	— 1·33	”	86 47 2·01	43·11	+41·10
21 10 35 11·1	”	10 32 33·08	31·79	— 1·29	”	86 22 51·00	92·03	+41·03
22 10 30 50 5	”	10 32 8·45	7·25	— 1·20	”	85 58 56·72	97·60	+40·88
23 10 26 30·4	”	10 31 45·30	44·09	— 1·21	”	85 35 16·61	60·74	+44·13
24 10 22 14·0	”	10 31 23·60	22·34	— 1·26	”	85 12 1·94	42·32	+40·38
27 10 9 29·7	”	10 30 26·91	25·71	— 1·20	”	84 4 6·42	44·86	+38·44
30 9 56 59·0	”	10 29 43·82	42·70	— 1·12	”	82 59 21·30	58·80	+37·50
31 9 52 52·1	”	10 29 32·70	31·47	— 1·23	”	82 38 31·88	68·51	+36·63
1849.								
July 11 10 11 26·9	”	17 29 21·51	21·43	— 0·08	”	66 56 43·07	50·48	+ 7·41
12 10 6 53·5	”	17 28 43·82	44·00	+ 0·18	”	67 3 56·45	61·95	+ 5·50
14 9 57 49·9	”	17 27 31·53	31·62	+ 0·09	”	67 18 56·37	64·36	+ 7·99
16 9 48 49·8	”	17 26 23·19	23·32	+ 0·13	”	67 34 51·05	56·73	+ 5 68
20 9 31 3·2	”	17 24 19·51	19·59	+ 0·08	”	68 8 54·76	60·70	+ 5 94
Aug. 17 7 35 28·8	”	17 18 50·37	50·55	+ 0·18	”	73 4 27·55	20·59	— 6·96
20 7 24 3·2	”	17 19 12·51	12·16	— 0·35	”	73 38 56·97	59·96	+ 2·99
1850.								
Aug. 9 12 36 15·9	”	21 47 57·16	56·60	— 0·56	”	79 19 28·45	6·29	—22·16
12 12 22 12·8	”	21 45 40·99	42·01	+ 1·02	”	79 44 58·51	35·56	—22·95
23 11 30 37·4	”	21 37 19·10	19·16	+ 0·06	”	81 33 26·65	2·89	—23·76
Oct. 3 8 28 17·3	”	21 16 8·23	5·51	— 2·72	”	89 45 40·43	16·84	—23·59
7 8 12 3·3	”	21 15 37·57	36·98	— 0·59	”	90 29 67·07	43·58	—23·49
21 7 17 58·4	”	21 16 35·59	34·62	— 0·97	”	——	—	—

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF CERES.

Mean Solar Time of Observation.					Point observed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observed	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1848.	d.	h.	m.	s.		h. m. s.	s.	s.		° ′ ″	″	″
Mar.	10	12	45	17·2	C	11 59 38·62	44·64	+ 6·02	C	71 10 48·79	92·94	+44·15
	11	12	40	30·5	"	11 58 47·77	54·13	+ 6·36	"	71 5 9·48	51·11	+41·63
	18	12	6	59·6	"	11 52 47 28	53·56	+ 6·28	"	70 30 32·69	72·91	+40·22
	21	11	52	37·9	"	11 50 12·65	18·94	+ 6·29	"	70 18 51·06	89·95	+38·89
	22	11	47	50·9	"	11 49 21·60	27·86	+ 6·26	"	70 15 24·34	62·81	+38·47
	23	11	43	4·5	"	11 48 30·99	37·13	+ 6·14	"	70 12 9·08	49·58	+40·50
	24	11	38	18·5	"	11 47 40·60	46·16	+ 5·56	"	70 9 11·23	49·56	+38·33
	25	11	33	33·4	"	11 46 51·36	56·92	+ 5·56	"	70 6 27·20	65·77	+38·57
	27	11	24	2·9	"	11 45 12·39	18·80	+ 6·41	"	70 1 43·61	80·08	+36·47
	28	11	19	19·4	"	11 44 24·55	30·69	+ 6·14	"	69 59 46·76	79·37	+32·61
	29	11	14	36·1	"	11 43 37·05	43·29	+ 6·24	"	69 57 55·37	93·62	+38·25
	30	11	9	53·6	"	11 42 50·36	56·60	+ 6·24	"	69 56 27·10	62 65	+35·55
	31	11	5	12·1	"	11 42 4·63	10·79	+ 6·16	"	69 55 10·80	46·90	+36·10
1849.												
June	30	11	52	17·7	"	18 27 6·83	18·14	+11·31	"	117 55 8·76	8·39	— 0·37
July	12	10	53	52·6	"	18 15 50·58	62·02	+11·44	"	118 33 39·65	44·82	+ 5·17
	13	10	49	4·4	"	18 14 58·22	69·69	+11·47	"	118 36 21·51	26·93	+ 5·42
	14	10	44	17·5	"	18 14 6·80	18·22	+11·42	"	118 38 57·28	64·19	+ 6·91
	16	10	34	45·8	"	18 12 26·75	38·11	+11·36	"	118 43 58·76	64·34	+ 5·58
	17	10	30	1·1	"	18 11 38·01	49·59	+11·58	"	118 46 20·12	27·34	+ 7·22
	20	10	15	55·7	"	18 9 19·34	30·65	+11·31	"	118 53 1·90	8·80	+ 6·90
Aug.	11	8	38	53·5	"	17 58 46·10	56·14	+10·04	"	119 24 25·83	38·21	+12·38
	16	8	18	36·0	"	17 58 8·23	18·00	+ 9·77	—	———	—	—
	18	8	10	40·5	"	17 58 4·48	14·17	+ 9·69	"	119 29 40·99	52·20	+11·21
	20	8	2	51·6	"	17 58 7·25	16·85	+ 9·60	"	119 30 53·20	64·20	+11·00
	21	7	58	59·7	"	17 58 11·12	20·60	+ 9·48	"	119 31 24·99	37·57	+12·58
1850.												
Oct.	1	11	46	27·8	"	0 26 57·63	70·53	+12·90	"	104 5 120·95	32·17	—88·78
	2	11	41	40·9	"	0 26 6·83	19·89	+13·06	"	104 9 102·09	14·27	—87·82
	4	11	33	7·9	"	0 24 25·64	39·05	+13·41	"	104 16 98·29	7·75	—90·54
	5	11	27	22·9	"	0 23 36·13	48·96	+12·83	"	104 19 108·09	18·67	—89·42
	9	11	8	22·9	"	0 20 19·14	32·10	+12·96	"	104 30 99·09	12·03	—87·06
	29	9	36	21·4	"	0 6 53·38	65·33	+11·95	"	104 37 83·94	8·21	—75·73
Nov.	22	7	56	26·8	"	0 1 19·71	30·44	+10·73	"	103 6 111·80	48·67	—63·13
	25	7	44	52·5	"	0 1 33·51	43·75	+10·24	"	102 49 83·81	20·97	—62·84
	26	7	41	3·8	"	0 1 40·70	50·83	+10·13	"	102 43 78·17	16·43	—61·74
	28	7	33	30·0	"	0 1 58·64	68·92	+10·28	"	102 30 104·12	45·38	—58·74
Dec.	6	7	4	6·2	"	0 4 2·85	12·08	+ 9·23	"	101 36 67·27	8·04	—59·23
	7	7	0	30·9	"	0 4 23·34	33·01	+ 9·67	"	101 28 108·24	49·97	—58·27
	11	6	46	22·2	"	0 5 58·36	68·44	+10·08	"	100 58 98·45	40·55	—57·90
	12	6	42	54·1	"	0 6 26·04	35·16	+ 9·12	"	100 50 113·56	54·60	—58·96
	14	6	35	59·3	"	0 7 22·98	31·92	+ 8·94	"	100 35 64·75	7·43	—57·32
1852.												
Jan.	8	11	22	45·2	"	6 32 32·77	49·18	+16·41	"	60 49 25·60	23·58	— 2·02
Feb.	2	9	24	48·6	"	6 12 51·38	66·65	+15·27	"	59 36 66·65	54·26	—12·39
	3	9	20	26·9	"	6 12 25·48	40·04	+14·56	"	59 35 30·01	15·19	—14·82

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF JUPITER.

Mean Solar Time of Observation.					Point observ-ed.	A R. from Observation.	A. R from N. A.	Error of N. A.	Point observ-ed.	N. P. D from Observation.	N. P. D. from N. A.	Error of N. A.
1848.	d.	h.	m.	s.		h. m. s.	s.	s.		° ′ ″	″	″
Jan.	6	12	5	29·1	C	7 7 24·78	24·71	— 0·07	C	67 15 35·49	31·59	— 3·90
	10	11	47	27·3	»	7 5 6·01	5·94	— 0·07	»	67 11 23·92	19·35	— 4·57
	13	11	33	56·5	»	7 3 22·89	22·90	+ 0·01	»	67 8 21·60	17·51	— 4·09
	14	11	29	26·4	»	7 2 48·56	48·89	+ 0 33	»	67 7 23·41	18·42	— 4·99
	15	11	24	55·7	1 L	7 2 15·07	15·11	+ 0·04	»	67 6 24·61	20·23	— 4·38
	17	11	15	58 5	C	7 1 8 25	8·27	+ 0·02	»	67 4 31·45	26·43	— 5·02
	18	11	11	29·6	»	7 0 35·31	35·27	— 0 04	»	67 3 35·48	31·33	— 4·15
	19	11	7	1·1	»	7 0 2·65	2·60	— 0·05	»	67 2 39·61	36·34	— 3·27
	20	11	2	32·9	»	6 59 30·02	30·24	+ 0·22	»	67 1 48·37	42·72	— 5·65
	21	10	58	5·1	»	6 58 58·13	58 24	+ 0·11	»	67 0 54·62	50·02	— 4·60
	22	10	53	37·8	»	6 58 26·68	26·61	— 0·07	»	66 59 63·39	58·44	— 4·95
	25	10	40	18·0	»	6 56 54 22	54·22	0·00	»	66 57 34·17	29·69	— 4·48
	27	10	31	26·9	»	6 55 54·80	54·91	+ 0·11	»	66 55 59·12	55·85	— 3·27
	29	10	22	37·9	»	6 54 57·58	57·62	+ 0·04	»	66 54 31·07	26·31	— 3·76
	31	10	13	51·2	»	6 54 2 42	2·51	+ 0 09	»	66 53 7·39	1·33	— 6·06
Feb.	1	10	9	28·9	1 & 2	6 53 35·88	35·84	— 0·04	»	66 52 22·17	20·40	— 1·68
	2	10	5	6·9	»	6 53 9·93	9·78	— 0·15	»	66 51 42·33	40·84	— 1·49
	3	10	0	45·5	»	6 52 44·33	44·32	— 0·01	»	66 51 2·98	2·29	— 0·69
	4	9	56	24·9	»	6 52 19·50	19·52	+ 0·02	»	66 50 27·14	24·91	— 2·23
	7	9	43	26·9	»	6 51 9·09	9·09	0·00	»	66 48 40·90	39·68	— 1·22
	10	9	30	36·1	»	6 50 5·30	4·98	— 0·32	»	66 47 7·14	4·56	— 2·58
	11	9	26	19·7	»	6 49 45 26	45·16	— 0·10	»	66 46 38·26	35·24	— 3·02
	12	9	22	5·0	»	6 49 26·06	25·96	— 0·10	»	66 46 8·04	6·82	— 1·22
	14	9	13	37·4	»	6 48 50·25	49·96	— 0·29	»	66 45 15·80	13·44	— 2·36
	16	9	5	12·5	»	6 48 17·08	17·07	— 0·01	»	66 44 30·11	24·44	— 5·67
	18	8	56	50·7	»	6 47 47·43	47·37	— 0·06	»	66 43 44·43	39·91	— 4·52
	19	8	52	40·5	C	6 47 33·06	33·74	+ 0·68	»	66 43 25·14	19·23	— 5·91
	21	8	44	23·4	1 L	6 47 8·82	8·89	+ 0·07	»	66 42 45·79	41·03	— 4·76
	22	8	40	17·3	C	6 46 57·54	57·68	+ 0·14	»	66 42 28·39	23·53	— 4·86
	23	8	36	11·2	»	6 46 47 16	47·32	+ 0·16	»	66 42 10·43	7·03	— 3·40
	24	8	32	5·9	»	6 46 37·81	37·78	— 0·03	»	66 41 55·76	51·61	— 4·15
	25	8	28	1·0	»	6 46 29·03	29·08	+ 0·05	»	66 41 41·63	37·17	— 4·46
	26	8	23	57·4	»	6 46 21·10	21·23	+ 0·13	»	66 41 28·11	23·75	— 4·36
	28	8	15	52·7	»	6 46 8·09	8·04	— 0·05	»	66 41 5·24	0·08	— 5·16
	29	8	11	51·4	»	6 46 2 80	2 70	— 0·10	»	66 40 54·32	49·83	— 4·49
Mar.	1	8	7	51·3	1 & 2	6 45 58·43	58·27	— 0·16	»	66 40 43·16	40·48	— 2·68
	2	8	3	51·6	»	6 45 54·74	54·64	— 0·10	»	66 40 35·46	32·20	— 3·26
	4	7	55	55·0	C	6 45 49·84	49·96	+ 0·12	»	66 40 20·43	18·57	— 1·86
	6	7	48	2·3	1 & 2	6 45 48·83	48·72	— 0·11	»	66 40 11·58	8·80	— 2·78
	7	7	44	7·0	»	6 45 49·35	49·38	+ 0·03	»	66 40 7·82	5·39	— 2·43
	9	7	36	19 2	C	6 45 53·24	53·24	0 00	»	66 40 4·75	1·50	— 3·25
	14	7	17	3·9	»	6 46 17·56	17·66	+ 0·10	»	66 40 12·79	8·81	— 3·98
	15	7	13	15·4	»	6 46 24·99	25·04	+ 0·05	»	66 40 16·35	13·37	— 2·98
	16	7	9	27·9	»	6 46 33·36	33·23	— 0·13	»	66 40 22·37	18·74	— 3·63
	18	7	1	54·6	»	6 46 52·21	52·05	— 0·16	»	66 40 35·22	32·34	— 2·88
	20	6	54	24·5	»	6 47 14·01	14·08	+ 0·07	»	66 40 52·39	49·92	— 2·47
	21	6	50	41·2	»	6 47 26·33	26·29	— 0·04	»	66 41 2·11	0·16	— 1·95
	22	6	46	58·4	1 & 2	6 47 39 60	39·27	— 0·33	»	66 41 12·26	11·40	— 0·86
	23	6	43	15·4	»	6 47 52·60	53·03	+ 0·43	»	66 41 25·03	23·62	— 1·41
	24	6	39	34·5	C	6 48 7·52	7·57	+ 0·05	»	66 41 38·24	36·84	— 1·40
	25	6	35	54·0	1 & 2	6 48 23·01	22·86	— 0·15	»	66 41 49·15	51·08	+ 1·93
	27	6	28	34·8	C	6 48 55·69	55·74	+ 0·05	»	66 42 24·78	22·58	— 2·20
	29	6	21	18·1	1 & 2	6 49 31·82	31·64	— 0·18	»	66 42 60·91	58·19	— 2·72
	30	6	17	41·9	C	6 49 50·63	50·86	+ 0·23	»	66 43 20·48	17·59	— 2·89
	31	6	14	5·8	»	6 50 10·42	10·49	+ 0·07	»	66 43 41·26	37·98	— 3·28

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF JUPITER, *(Continued.)*

Mean Solar Time of Observation					Point observed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1848.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
April	1	6	10	30·6	C	6 50 31·08	30·99	— 0 09	C	66 43 61·94	59·45	— 2·49
Oct.	19	20	1	19·1	"	9 26 3·50	3·47	— 0·03	"	74 14 5·78	3·39	— 2·39
	22	19	21	11·8	"	9 27 39·69	39·61	— 0·08	"	74 21 5·51	4·17	— 1·34
1849.												
Feb.	9	12	0	32·7	"	9 19 29·11	28·70	— 0·41	"	73 18 52·38	49·85	— 2·53
	10	11	56	5·1	"	9 18 57·83	57·41	— 0·42	"	73 16 21·54	20·77	— 0·77
	14	11	38	17·8	"	9 16 53·59	53·30	— 0·29	"	73 6 39·15	35·67	— 3·48
	15	11	33	51·8	"	9 16 22·96	22·65	— 0·31	"	73 4 15·43	12·57	— 2·86
	16	11	29	25·4	"	9 15 52·43	52·18	— 0·25	"	73 1 54·51	51·02	— 3·49
	19	11	16	6·7	1 L	9 14 22 74	22·18	— 0·56	"	72 54 58·17	56·22	— 1·95
	21	11	7	17·4	C	9 13 23·93	23·57	— 0·36	"	72 50 33·09	28·88	— 4·21
	22	11	2	51·7	1 L	9 12 55·10	54·74	— 0·36	"	72 48 20·97	18·19	— 2·78
Mar.	2	10	27	49·7	C	9 9 18·69	18 38	— 0·31	"	72 32 16·99	15·17	— 1·82
	3	10	23	29·1	"	9 8 53·89	53·41	— 0·48	"	72 30 28·03	26·03	— 2·00
	5	10	14	49·0	"	9 8 5·51	5·01	— 0·50	"	72 26 58·85	55·82	— 3·03
	7	10	6	10·9	"	9 7 19·11	18·79	— 0·32	"	72 23 36·39	36·74	+ 0·35
	8	10	1	53·1	"	9 6 56·94	56·54	— 0·40	"	72 22 5·19	1·51	— 3·68
	9	9	57	34·0	1 L	9 6 35·23	34·88	— 0·35	"	72 20 31·58	29·25	— 2·33
	12	9	44	47·1	C	9 5 33·90	33·48	— 0·42	"	72 16 13·00	10·25	— 2·75
	14	9	36	17·4	1 & 2	9 4 56·06	55·68	— 0·38	"	72 13 36·21	32·81	— 3·40
	16	9	27	50·1	"	9 4 20·62	20·48	— 0·14	"	72 11 10·98	7·94	— 3·04
	17	9	23	38·5	"	9 4 4·40	3·90	— 0·50	"	72 10 2·06	0·19	— 1·87
	19	9	15	15·1	"	9 3 33·15	32·79	— 0·36	"	72 7 57·29	54·21	— 3·08
	20	9	11	4·8	"	9 3 18·65	18·27	— 0·38	"	72 6 57·86	56·00	— 1·86
	21	9	6	53·9	1 L	9 3 4·93	4·47	— 0·46	"	72 6 4·39	1·09	— 3·30
	22	9	2	46·4	C	9 2 51·63	51·37	— 0·26	"	72 5 11·55	9·44	— 2·11
	24	8	54	30·0	"	9 2 27·60	27·37	— 0·23	"	72 3 38·83	35·81	— 3·02
	27	8	42	12·5	"	9 1 57·20	56·91	— 0·29	"	72 1 43·57	40·26	— 3·31
	28	8	38	8·1	"	9 1 48·77	48·26	— 0·51	"	72 1 11·71	8·31	— 3·40
	29	8	34	4·2	"	9 1 40·69	40·35	— 0·34	"	72 0 42·09	39·66	— 2·43
	30	8	30	1·1	"	9 1 33·46	33 20	— 0·26	"	72 0 16·25	14·36	— 1·89
	31	8	25	57·3	1 L	9 1 26·93	26·80	— 0·13	"	71 59 55·50	52·25	— 3·25
April	2	8	17	56·7	1 & 2	9 1 16·61	16·28	— 0·33	"	71 59 23·06	18·08	— 4·98
	3	8	13	56·9	"	9 1 12·58	12·16	— 0·42	"	71 59 10·13	5·92	— 4·21
	9	7	50	12·5	"	9 1 3·65	3·29	— 0·36	"	71 59 3·93	1·30	— 2·63
	11	7	42	23·7	"	9 1 6·63	6·35	— 0·28	"	71 59 27·22	25·58	— 1·64
	12	7	38	30·3	"	9 1 9·26	8·99	— 0·27	"	71 59 44·39	42·46	— 1·93
	13	7	34	37·5	"	9 1 12·68	12·38	— 0·30	"	72 0 4·34	2·59	— 1·75
	16	7	23	3·7	"	9 1 27·19	27·00	— 0·19	"	72 1 24·68	21·93	— 2·75
	17	7	19	14·5	"	9 1 33·57	33·35	— 0·22	"	72 1 57·19	54·60	— 2·59
	18	7	15	25·9	"	9 1 40·57	40·42	— 0·15	"	72 2 32·40	30·47	— 1·93
	23	6	56	33·0	"	9 2 27·19	26·64	— 0·55	"	72 6 19·91	16·00	— 3·91
	25	6	49	3·8	"	9 2 50·44	50·12	— 0·32	"	72 8 11·20	7·50	— 3·70
	27	6	41	37·4	"	9 3 16·90	16·37	— 0·53	"	72 10 12·33	11·13	— 1·20
May	1	6	26	55·2	C	9 4 17·48	17·03	— 0·45	"	72 14 54·85	53·49	— 1·36
	2	6	23	16·0	"	9 4 34·20	33·85	— 0·35	"	72 16 12·01	11·33	— 0·68
	3	6	19	37·7	"	9 4 51·87	51·40	— 0·47	"	72 17 32·95	32·05	— 0·90
Oct.	12	21	33	7·4	1 L	10 59 34·90	34·37	— 0·53	"	82 29 36·37	34·29	— 2·08
	14	21	26	44·5	2 L	11 1 1·50	0·84	— 0·66	"	82 38 14·57	11·65	— 2·92
	16	21	20	17·7	"	11 2 26·75	26·29	— 0·46	"	82 46 46·28	43·38	— 2·90
	17	21	17	3·9	"	11 3 8·97	8·61	— 0·36	"	82 50 59·00	56·66	— 2·34
	18	21	13	49·9	"	11 3 51·41	50·67	— 0·74	"	82 55 11·49	9·07	— 2·42

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF JUPITER, (*Continued*)

Mean Solar Time of Observation.					Point observed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observed.	N. P. D. from Observation	N. P. D. from N. A.	Error of N. A.
1849.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Oct.	19	21	10	35·5	2 L	11 4 32·92	32·45	— 0·47	C	82 59 21·45	19·66	— 1·79
	21	21	4	6·5	,,	11 5 55·65	55·16	— 0·49	,,	83 7 37·87	35·80	— 2·07
	22	21	0	51·2	,,	11 6 36·71	36·06	— 0·65	,,	83 11 45·56	41·22	— 4·34
	23	20	57	35·7	,,	11 7 17·30	16·69	— 0·61	,,	83 15 49·78	45·10	— 4·68
	26	20	47	47·1	,,	11 9 17·03	16·72	— 0·31	,,	83 27 48·21	45·54	— 2·67
	30	20	34	38·7	,,	11 11 53·03	52·26	— 0·77	,,	83 43 20·85	19·17	— 1·68
	31	20	31	21·5	,,	11 12 31·01	30·30	— 0·71	,,	83 47 9·57	7·33	— 2·24
Nov.	2	20	24	44·4	,,	11 13 45·97	45·38	— 0·59	,,	83 54 39·27	37·75	— 1·52
	5	20	14	46·5	,,	11 15 35·81	35·27	— 0·54	,,	84 5 39·47	36·01	— 3·46
	8	20	4	45·0	,,	11 17 22·32	21·81	— 0·51	,,	84 16 15·58	13·37	— 2·21
	9	20	1	23·3	,,	11 17 57·07	56·55	— 0·52	,,	84 19 42·06	40·86	— 1·20
	11	19	54	40·2	,,	11 19 5·56	4·80	— 0·76	,,	84 26 30·57	28·25	— 2·32
	12	19	51	17·1	,,	11 19 38·82	38·28	— 0·54	,,	84 29 49·63	47·95	— 1·68
	13	19	47	54·2	,,	11 20 11·82	11·37	— 0·45	,,	84 33 7·68	4 97	— 2·71
	14	19	44	30·8	,,	11 20 44·47	44·01	— 0·46	,,	84 36 22·07	19·22	— 2·85
	19	19	27	27·4	,,	11 23 21·16	20·56	— 0·60	,,	84 51 45·74	47·64	+ 1·90
	20	19	24	1·3	,,	11 23 50·97	50·48	— 0·49	,,	84 54 47·46	43·34	— 4·12
	22	19	17	8·0	,,	11 24 49·52	48·90	— 0·62	,,	85 0 30·87	28·56	— 2·31
	23	19	13	40·6	,,	11 25 17·87	17·39	— 0·48	,,	85 3 19·54	15·94	— 3·60
	29	18	52	42·7	1 L	11 27 58·50	57·73	— 0·77	,,	85 18 52·89	51·34	— 1·55
	30	18	49	13·6	2 L	11 28 23·04	22·65	— 0·39	,,	85 21 18·43	15·44	— 2·99
Dec.	2	18	42	10·5	,,	11 29 11·59	10·87	— 0·72	,,	85 25 54·97	52·99	— 1·98
	3	18	38	36·3	1 & 2	11 29 34·88	34·16	— 0·72	,,	85 28 9·48	6·48	— 3·00
	4	18	35	4·4	2 L	11 29 57·65	56·90	— 0·75	,,	85 30 19·93	15·27	— 4 66
	19	17	40	33 6	1 & 2	11 34 27·54	26 88	— 0·66	,,	85 54 59·08	57·91	— 1·17
	20	17	36	51·0	,,	11 34 40·75	39·86	— 0·89	,,	85 56 5·09	3·31	— 1·78
	21	17	33	7·5	,,	11 34 53·03	52·20	— 0·83	,,	85 57 8·08	5·47	— 2 61
1850.												
Jan.	16	15	52	13·2	,,	11 36 13·22	12·41	— 0·81	,,	85 57 50·83	48·35	— 2·48
	17	15	48	11·3	,,	11 36 6·90	6·00	— 0·90	,,	85 56 50·40	49 08	— 1·32
	18	15	44	8·0	,,	11 35 59 54	58·89	— 0·65	,,	85 55 47·04	45·45	— 1·59
	27	15	7	11·0	,,	11 34 25·32	24·31	— 1·01	,,	85 43 3·80	1·01	— 2·79
Feb.	28	12	49	41·1	,,	11 22 42·49	41·88	— 0·61	,,	84 21 26·02	26·01	— 0·01
Mar.	11	12	1	15·5	2 L	11 17 29·00	27·97	— 1·03	,,	83 47 22·39	19·03	— 3·36
	12	11	56	47·7	1 L	11 16 60 37	59·22	— 1·15	,,	83 44 18·05	14·94	— 3·11
	14	11	47	58·8	,,	11 16 3·28	1·95	— 1·33	,,	83 38 11·48	9·62	— 1·86
	15	11	43	34·6	,,	11 15 34·67	33·50	— 1·17	,,	83 35 11·59	8·68	— 2·91
	18	11	30	22·2	,,	11 14 9·93	8·82	— 1·11	,,	83 26 17·19	14·22	— 2·97
	19	11	25	58·9	,,	11 13 42·20	40·95	— 1·25	,,	83 23 21·32	19·38	— 1·94
	20	11	21	35·2	,,	11 13 14·50	13·29	— 1·21	,,	83 20 27·96	26·07	— 0·89
	21	11	17	11·4	,,	11 12 46·97	45·85	— 1·12	,,	83 17 37·13	34·81	— 2·32
	22	11	12	48·8	,,	11 12 19·70	18·65	— 1·05	,,	83 14 47·46	45·59	— 1·87
	23	11	8	25·9	,,	11 11 52·76	51·71	— 1·05	,,	83 11 63·14	58·46	— 4·68
	25	10	59	43·7	2 L	11 10 59·67	58·69	— 0·98	,,	83 6 34·04	31·09	— 2·95
	26	10	55	22·0	,,	11 10 33 66	32·64	— 1·02	,,	83 3 52·78	51·02	— 1·76
	27	10	51	0·7	,,	11 10 8·15	6·91	— 1·24	,,	83 1 15·39	13·41	— 1·98
	28	10	46	39·8	,,	11 9 42·59	41·53	— 1·06	,,	82 58 41·73	38·52	— 3·21
April	4	10	16	19·7	1 & 2	11 6 55·16	54·85	— 0·31	,,	82 41 60·07	55·19	— 4·88
	5	10	12	0·7	1 L	11 6 33·56	32·78	— 0·78	,,	82 39 48·10	44·98	— 3·12
	6	10	7	44·0	,,	11 6 12·88	11·20	— 1·68	,,	82 37 39·24	37·12	— 2·12
	8	9	59	10·3	,,	11 5 30·96	29·51	— 1·45	,,	82 33 35·03	31·26	— 3·77

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF JUPITER, (Continued.)

Mean Solar Time of Observation.					Point observed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observed	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1850.	d.	h.	m.	s.		h. m. s.	s.	s.		° ′ ″	″	″
April	9	9	54	53·3	1 L	11 5 9·78	9·44	— 0·34	C	82 31 37·67	36·08	— 1·59
	10	9	50	39·1	,,	11 4 50·85	49·91	— 0·94	,,	82 29 45·45	42·93	— 2·52
	11	9	46	24·0	,,	11 4 31·81	30·91	— 0·90	,,	82 27 56·26	53·67	— 2·59
	13	9	37	56·0	,,	11 3 55·49	54·61	— 0·88	,,	82 24 28·72	26·18	— 2·54
	15	9	29	33·1	2 L	11 3 21·74	20·62	— 1·12	,,	82 21 18·04	14·42	— 3·62
	16	9	25	18·6	1 L	11 3 5·65	4·51	— 1·14	,,	82 19 46·09	44·48	— 1·61
	18	9	16	56·4	,,	11 2 35·30	34·13	— 1·17	,,	82 16 57·85	56·62	— 1·23
	19	9	12	45·8	,,	11 2 20·79	19·86	— 0·93	,,	82 15 42·53	38·82	— 3·71
	20	9	8	36·6	,,	11 2 7·16	6·22	— 0·94	,,	82 14 27·85	25·10	— 2·75
	22	9	0	19·3	,,	11 1 41·72	40·82	— 0·90	,,	82 12 12·05	10·19	— 1·86
	23	8	56	11·8	,,	11 1 30·17	29·10	— 1·07	,,	82 11 11·44	8·99	— 2·45
	24	8	52	7·9	,,	11 1 18·78	18·01	— 0·77	,,	82 10 16·07	11·98	— 4·09
	25	8	48	1·1	2 L	11 1 8·39	7·57	— 0·82	,,	82 9 22·03	19·25	— 2·78
	26	8	43	54·9	,,	11 0 58·43	57·79	— 0·64	,,	82 8 33·70	30·58	— 3·12
	27	8	39	51·0	,,	11 0 49·66	48·63	— 1·03	,,	82 7 48·93	46·09	— 2·84
	29	8	31	42·9	,,	11 0 33·23	32·38	— 0·85	,,	82 6 33·19	30·28	— 2·91
	30	8	27	40·2	,,	11 0 26·30	25·24	— 1·06	,,	82 5 61·38	58·63	— 2·75
May	1	8	23	33·9	1 L	11 0 19·49	18·75	— 0·74	,,	82 5 33·91	31·26	— 2·65
	2	8	19	36·	—	—	—	—	,,	82 5 11·11	4·08	— 7·03
	3	8	15	32·7	C	11 0 8·59	7·81	— 0·78	,,	82 4 52·49	49·34	— 3·15
	4	8	11	32·3	,,	11 0 3·90	3·34	— 0·56	,,	82 4 36·73	34·80	— 1·93
	7	7	59	36·	—	—	—	—	,,	82 4 18·67	18·79	+ 0·12
	9	7	51	40·8	,,	10 59 52·06	51·19	— 0·87	,,	82 4 27·35	26·11	— 1·24
	10	7	47	44·6	,,	10 59 51·55	50·79	— 0·76	,,	82 4 39·49	37·12	— 2·37
	11	7	43	49·0	,,	10 59 52·06	51·08	— 0·98	,,	82 4 57·12	52·41	— 4·71
	13	7	35	59·8	,,	10 59 54·87	53·69	— 1·18	,,	82 5 38·05	35·71	— 2·34
	14	7	32	6·3	,,	10 59 57·01	56·01	— 1·00	,,	82 6 7·31	3·62	— 3·69
	15	7	28	13·7	,,	10 59 59·89	59·00	— 0·89	,,	82 6 39·77	35·72	— 4·05
	17	7	20	27·9	1 L	11 0 7·80	6·99	— 0·81	,,	82 7 52·93	52·52	— 0·41
	18	7	16	37·5	,,	11 0 12·99	12·00	— 0·99	,,	82 8 39·98	37·15	— 2·83
	21	7	5	9·6	C	11 0 31·62	30·95	— 0·67	,,	82 11 17·68	15·46	— 2·22
	22	7	1	21·4	,,	11 0 39·57	38·56	— 1·01	,,	82 12 18·15	16·37	— 1·78
Nov.	13	21	19	58·3	,,	12 51 34·24	32·97	— 1·27	,,	94 16 41·45	36·38	— 5·07
	14	21	16	44·7	,,	12 52 16·74	15·45	— 1·29	,,	94 20 63·08	56·23	— 6·85
	18	21	3	48·0	1 & 2	12 55 4·14	2·95	— 1·19	,,	94 37 59·73	56·77	— 2·96
	19	21	0	33·2	,,	12 55 45·30	44·22	— 1·08	,,	94 42 9·58	7·00	— 2·58
	20	20	57	18·1	,,	12 56 26·39	25·20	— 1·19	,,	94 46 19·59	15·16	— 4·43
	21	20	54	2·9	,,	12 57 7·05	5·93	— 1·12	,,	94 50 22·94	21·33	— 1·61
	22	20	50	47·7	,,	12 57 47·73	46·38	— 1·35	,,	94 54 29·03	25·35	— 3·68
	24	20	44	15·3	,,	12 59 7·65	6·43	— 1·22	,,	95 2 33·50	26·90	— 6·60
	25	20	40	58·7	,,	12 59 47·26	46·03	— 1·23	,,	95 6 29·21	24·39	— 4·82
	27	20	34	25·1	,,	13 1 5·51	4·25	— 1·26	,,	95 14 12·82	12·21	— 0·61
Dec.	5	20	7	57·5	,,	13 6 5·91	4·34	— 1·57	,,	95 43 52·83	49·57	— 3·26
	8	19	57	55·3	,,	13 7 51·76	51·13	— 0·63	,,	95 54 15·84	13·48	— 2·36
	10	19	51	12·8	,,	13 9 1·24	0·28	— 0·96	,,	96 0 60·77	55·64	— 5·13
	11	19	47	50·8	,,	13 9 35·26	34·27	— 0·99	,,	96 4 14·56	12·54	— 2·02
	12	19	44	28·5	,,	13 10 8·84	7·85	— 0·99	,,	96 7 29·39	26·61	— 2·78
	13	19	41	6·2	,,	13 10 42·48	41·01	— 1·47	,,	96 10 43·72	37·83	— 5·89
	15	19	34	18·5	,,	13 11 46·99	46·06	— 0·93	,,	96 16 56·60	51·18	— 5·42
	16	19	30	54·7	C	13 12 19·12	17·95	— 1·17	,,	96 19 55·18	53·74	— 1·44
	17	19	27	30·0	1 & 2	13 12 50·36	49·39	— 0·97	,,	96 22 57·25	53·10	— 4·15
	22	19	10	20·3	C	13 15 20·75	19·83	— 0·92	,,	96 37 5·83	3·81	— 2·02
	23	19	6	53·2	,,	13 15 49·28	48·50	— 0·78	,,	96 39 47·63	44·50	— 3·13

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF JUPITER, (Continued.)

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1851.	d.	h.	m.	s.		h. m. s.	s.	s.		° ′ ″	″	″
Jan.	24	17	11	24·6	1 & 2	13 26 12·07	11·05	— 1·02	C	97 34 4·93	3·29	— 1·64
	27	17	0	2·3	”	13 26 37·45	36·35	— 1·10	—	——	—	—
Feb.	2	16	36	58·7	”	13 27 9·40	8·16	— 1·24	”	97 37 18·75	17·84	— 0·91
	3	16	33	5·3	”	13 27 12·19	10·99	— 1·20	”	97 37 18·90	18·62	— 0·28
	4	16	29	11·5	”	13 27 14·35	13·11	— 1·24	”	97 37 19·54	15·22	— 4·32
	5	16	25	17·4	”	13 27 16·12	14·51	— 1·61	”	97 37 9·81	7·71	— 2·10
	6	16	21	21·6	”	13 27 16·23	15·21	— 1·02	”	97 36 56·54	55·95	— 0·59
	7	16	17	25·7	”	13 27 16·27	15·19	— 1·08	”	97 36 41·65	40·01	— 1·64
	9	16	9	32·1	”	13 27 14·23	13·04	— 1·19	”	97 35 57·32	55·77	— 1·55
	10	16	5	33·8	”	13 27 11·93	10·89	— 1·04	”	97 35 28·59	27·57	— 1·02
	11	16	1	35·0	”	13 27 9·45	8·05	— 1·40	”	97 34 54·44	55·02	+ 0·58
	12	15	57	35·4	”	13 27 5·76	4·50	— 1·26	”	97 34 19·37	18·50	— 0·87
	14	15	49	34·4	”	13 26 56·33	55·29	— 1·04	”	97 32 55·17	53·34	— 1·83
	16	15	41	30·7	”	13 26 44·00	43·28	— 0·72	”	97 31 13·79	11·94	— 1·85
	17	15	37	28·0	”	13 26 37·67	36·24	— 1·43	”	97 30 15·87	15·29	— 0·58
	19	15	29	20·0	”	13 26 21·36	20·09	— 1·27	”	97 28 12·55	9·92	— 2·63
	20	15	25	15·4	”	13 26 12·53	10·98	— 1·55	”	97 27 2·37	1·38	— 0·99
	21	15	21	9·0	”	13 26 2·21	1·19	— 1·02	”	97 25 49·30	48·92	— 0·38
	23	15	12	56·1	”	13 25 40·61	39·58	— 1·03	”	97 23 13·90	12·36	— 1·54
	24	15	8	48·3	”	13 25 29·24	27·78	— 1·46	”	97 21 51·19	48·40	— 2·79
	25	15	4	40·0	”	13 25 16·64	15·31	— 1·33	”	97 20 24·01	20·69	— 3·32
April	17	11	23	49·7	1 L	13 4 55·66	54·24	— 1·42	N L	95 12 20·08	16·86	— 3·22
May	10	9	44	8·4	1 & 2	12 55 36·23	34·80	— 1·43	C	94 17 48·00	45·16	— 2·84
June	16	7	13	36·0	C	12 50 31·37	29·70	— 1·67	—	——	—	—
	17	7	9	43·5	”	12 50 35·09	33·78	— 1·31	—	——	—	—
	18	7	5	51·0	”	12 50 39·12	38·50	— 0·62	—	——	—	—
	24	6	42	58·4	”	12 51 21·30	20·27	— 1·03	—	——	—	—
	30	6	20	26·7	”	12 52 25·86	24·80	— 1·06	—	——	—	—
July	1	6	16	44·0	”	12 52 39·00	37·72	— 1·28	—	——	—	—
	2	6	13	1·1	”	12 52 52·45	51·25	— 1·20	—	——	—	—
	22	5	0	51·8	”	12 59 21·78	21·09	— 0·69	—	——	—	—
Dec.	19	20	57	24·2	1 & 2	14 49 55·72	54·79	— 0·93	”	105 15 46·46	44·88	— 1·58
	21	20	51	1·0	”	14 51 24·26	22·98	— 1·28	”	105 22 9·18	7·34	— 1·84
	22	20	47	48·2	”	14 52 7·81	7·02	— 0·79	”	105 25 15·12	15·87	+ 0·75
	23	20	44	36·0	”	14 52 51·48	50·51	— 0·97	”	105 28 22·82	22·30	— 0·52
1852.												
Jan.	1	20	15	29·5	C	14 59 8·79	7·47	— 1·32	”	105 54 45·37	43·63	— 1·74
	15	19	29	10·9	”	15 7 54·12	52·93	— 1·19	”	106 29 40·12	38·89	— 1·23
	18	19	19	3·8	”	15 9 35·49	34·39	— 1·10	S L	106 36 7·02	8·60	+ 1·58
	19	19	15	39·6	1 L	15 10 8·50	7·20	— 1·30	C	106 38 9·42	11·60	+ 2·18
	20	19	12	17·5	C	15 10 40·93	39·50	— 1·43	N L	106 40 12·96	13·57	+ 0·61
	21	19	8	53·3	”	15 11 12·59	10·72	— 1·87	C	106 42 13·45	13·05	— 0·40
	22	19	5	28·3	”	15 11 43·78	42·57	— 1·21	S L	106 44 9·29	9·99	+ 0·70
	23	19	2	3·2	”	15 12 14·60	13·32	— 1·28	—	——	—	—
	25	18	55	10·8	”	15 13 14·26	13·19	— 1·07	—	——	—	—
	27	18	48	16·6	”	15 14 11·80	10·86	— 0·94	—	——	—	—
	29	18	41	20·4	”	15 15 7·41	6·27	— 1·14	—	——	—	—
Feb.	2	18	27	19·5	1 & 2	15 16 51·39	50·14	— 1·25	—	——	—	—
May	29	10	25	13·8	C	14 54 42·88	41·50	— 1·38	N L	105 25 34·98	38·51	+ 3·53

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF JUPITER, (Continued.)

Mean Solar Time of Observation.					Point observed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1852.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s*	*s.*		° ′ ″	″	″
June	1	10	12	12·8	1 & 2	14 53 26·19	24·84	— 1·35	N L	105 20 37·08	38·79	+ 1·71
	3	10	3	28·9	"	14 52 37·03	35·97	— 1·06	S L	105 17 30·06	28·88	— 1·18
	4	9	59	9·4	"	14 52 13·28	12·23	— 1·05	N L	105 15 55·32	57·00	+ 1·68
	5	9	54	50·3	"	14 51 50·33	49·01	— 1·32	S L	105 14 27·10	27·35	+ 0·25
	7	9	46	13·8	"	14 51 5·34	4·07	— 1·27	N L	105 11 32·78	35·06	+ 2·28
	8	9	41	55·9	"	14 50 43·58	42·37	— 1·21	S L	105 10 12·43	12·34	— 0·09
	9	9	37	39·9	"	14 50 22·08	21·22	— 0·86	N L	105 8 52·45	52·03	— 0·42
	10	9	33	22·8	"	14 50 1·81	0·62	— 1·19	S L	105 7 32·81	34·22	+ 1·41
	14	9	16	23·0	"	14 48 45·19	43·99	— 1·20	N L	105 2 48·54	48·95	+ 0·81
July	10	7	30	7·9	C	14 44 43·16	41·98	— 1·18	"	104 51 24·52	26·76	+ 2·24
	12	7	22	16 9	"	14 44 44·03	42·88	— 1·15	S L	104 52 4·84	3·83	— 1·01
	13	7	18	22·5	"	14 44 45·50	44·41	— 1·09	N L	104 52 23·99	27·24	+ 3·25
	14	7	14	28·9	"	14 44 47·63	46·66	— 0·97	—	——	—	—
	15	7	10	35·9	"	14 44 50·68	49·62	— 1·06	—	——	—	—
	16	7	6	43·7	"	14 44 54·31	53·31	— 1·00	S L	104 53 57·43	56·85	— 0·58
	17	7	2	51·7	"	14 44 58·87	57·69	— 1·18	—	——	—	—
	19	6	55	11·3	"	14 45 9·51	8·58	— 0·93	—	——	—	—
	20	6	51	21·8	"	14 45 16·08	15·07	— 1·01	—	——	—	—
	27	6	24	54·3	"	14 46 20·89	20·04	— 0·85	—	——	—	—
Sept.	22	3	7	40·0	"	15 13 16·95	16·11	— 0·84	C	107 10 1·08	3·30	+ 2·22
	27	2	51	35·3	"	15 16 52·41	51·93	— 0·48	"	107 24 51·75	54·59	+ 2·84
	28	2	48	28·2	"	15 17 36·66	36·19	— 0·47	"	107 27 54·48	54·65	+ 0·17
	29	2	45	12·0	"	15 18 21·28	20·79	— 0·49	"	107 30 52·39	55·19	+ 2·80

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF SATURN.

1848.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Sept.	14	11	58	31·9	C	23 33 57·78	55·70	— 2·08	C	95 25 49·14	55·68	+ 6·54
	15	11	54	19·3	"	23 33 40·83	38·73	— 2·10	"	95 27 40·46	47·74	+ 7·28
Oct.	17	9	40	16·3	"	23 25 25·66	23·75	— 1·91	"	96 19 12·97	17·83	+ 4·86
	18	9	36	8·0	"	23 25 13·02	11·37	— 1·65	"	96 20 25·83	29·49	+ 3·66
	19	9	31	59·5	"	23 24 60·93	59·25	— 1·68	"	96 21 33·82	39·12	+ 5·30
Nov.	11	7	58	23·7	"	23 21 50·17	48·47	— 1·70	"	96 37 57·84	63·05	+ 5·21
	18	7	30	31·9	"	23 21 30·09	28·15	— 1·94	"	96 38 41·61	46·68	+ 5·07
	20	7	22	37·6	"	23 21 27·34	25·83	— 1·51	"	96 38 31·12	36·25	+ 5·13
	21	7	18	41·3	"	23 21 27·13	25·25	— 1·88	"	96 38 22·80	27·17	+ 4·37
Dec.	4	6	28	2·7	"	23 21 55·44	53·80	— 1·64	"	96 32 32·66	37·89	+ 5·23
	5	6	24	11·8	"	23 21 60·70	58·76	— 1·94	"	96 31 52·64	53·40	+ 0·76
1849.												
Aug.	9	15	18	55·5	"	0 31 60·67	59·02	— 1·65	"	89 17 51·80	53·76	+ 1·96
	13	15	2	40·2	"	0 31 28·94	27·47	— 1·47	"	89 22 17·82	20·14	+ 2·32
	16	14	50	25·4	"	0 31 1·99	0·32	— 1·67	"	89 25 58·25	60·66	+ 2·41
	17	14	46	19·9	"	0 30 52·23	50·63	— 1·60	"	89 27 16·59	17·91	+ 1·32
	21	14	29	54·4	"	0 30 10·01	8·76	— 1·25	"	89 32 42·05	44·70	+ 2·65
	22	14	25	47·9	"	0 29 59·46	57·54	— 1·92	"	89 34 8·60	10·59	+ 1·99
	23	14	21	39·5	"	0 29 47·28	46·05	— 1·23	"	89 35 36·24	38·16	+ 1·92
	24	14	17	32·9	"	0 29 35·93	34·26	— 1·67	"	89 37 5·20	7·26	+ 2·06
Sept.	27	11	55	13·0	"	0 20 55·59	54·00	— 1·59	"	90 37 31·21	34·89	+ 3·68

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF SATURN, (*Continued.*)

Mean Solar Time of Observation.					Point observed.	A R from Observation.	A. R. from N. A.	Error of N. A.	Point observed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1849.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s*	*s.*		° ′ ″	″	″
Oct.	1	11	38	20·7	C	0 19 47·03	45·43	— 1·60	C	90 45 0·07	3·34	+ 3·27
	2	11	34	7·3	»	0 19 29·71	28·35	— 1·36	»	90 46 50·10	55·03	+ 4·93
	10	11	0	25·9	»	0 17 15·34	13·66	— 1·68	»	91 1 8·47	14·90	+ 6·43
	12	10	52	1·3	»	0 16 42·47	40·87	— 1·60	»	91 4 36·76	40·68	+ 3·92
	13	10	47	50·0	»	0 16 26 35	24·68	— 1·67	»	91 6 18·65	21·82	+ 3·17
	15	10	39	25·5	»	0 15 53·75	52·68	— 1·07	»	91 9 38·68	40·35	+ 1·67
	18	10	26	51·4	»	0 15 7·81	5·87	— 1·94	»	91 14 25·95	27·79	+ 1·84
	19	10	22	40·0	»	0 14 52·13	50·63	— 1·50	»	91 15 58·22	60·68	+ 2·46
	20	10	18	29·7	»	0 14 37·40	35·57	— 1·83	»	91 17 29·15	32·00	+ 2·85
	22	10	10	8·2	»	0 14 7·89	6·07	— 1·82	»	91 20 29·18	29·91	+ 0·73
	23	10	5	57·8	»	0 13 53·37	51·63	— 1·74	»	91 21 53·92	56·30	+ 2·38
	24	10	1	47·6	»	0 13 39·13	37·41	— 1·72	»	91 23 17·90	20·90	+ 3·00
	25	9	57	37·7	»	0 13 24·69	23·42	— 1 27	»	91 24 41·50	43·71	+ 2·21
	26	9	53	28·2	»	0 13 11·78	9·67	— 2·11	»	91 26 2·74	4·72	+ 1·98
	29	9	41	0·	—	——	—	—	»	91 29 51·09	56·17	+ 5·08
	31	9	32	44·1	»	0 12 6·54	4·69	— 1·85	»	91 32 17·61	20·63	+ 3·02
Nov.	1	9	28	36·0	»	0 11 54·34	52·50	— 1·84	»	91 33 27·14	29·78	+ 2·64
	2	9	24	27·9	»	0 11 42·18	40·58	— 1·60	»	91 34 35·73	36·82	+ 1·09
	3	9	20	20·5	»	0 11 30·66	28·96	— 1·70	»	91 35 40·23	41·75	+ 1·52
	6	9	8	0·	—	——	—	—	»	91 38 41·36	43·38	+ 2·02
	8	8	59	47·3	»	0 10 36·96	35·33	— 1·63	»	91 40 31·19	33·25	+ 2·06
	9	8	55	41·5	»	0 10 27·07	25·55	— 1·52	»	91 41 22·33	24·76	+ 2·43
	10	8	51	36·3	»	0 10 17·88	16·09	— 1·79	»	91 42 11·39	13·97	+ 2·58
	12	8	43	26·6	»	0 9 59·80	58·19	— 1·61	»	91 43 42·17	45·11	+ 2·94
	13	8	39	22·6	»	0 9 51·48	49·76	— 1·72	»	91 44 23·84	27·05	+ 3·21
	15	8	31	14·8	»	0 9 35 61	33 91	— 1·70	»	91 45 42·98	43·56	+ 0·58
	19	8	15	3·7	»	0 9 8·17	6·54	— 1·63	»	91 47 44·30	46·43	+ 2·13
	20	8	11	0·	—	——	—	—	»	91 48 9·81	10·75	+ 0·94
	21	8	7	0 6	»	0 8 56·74	55·08	— 1·66	»	91 48 30·61	32·59	+ 1·98
	22	8	2	59·6	»	0 8 51·55	49 90	— 1·65	»	91 48 50·77	51·84	+ 1·07
	24	7	54	58·3	»	0 8 42·03	40·71	— 1·32	»	91 49 20·25	22·47	+ 2·22
	28	7	39	1·0	»	0 8 28·33	26·92	— 1·41	»	91 49 49·25	52·43	+ 3·18
	29	7	35	2·6	»	0 8 25·91	24·43	— 1·48	—	——	—	—
	30	7	31	4·5	»	0 8 23·83	22·34	— 1·49	»	91 49 49·74	51·74	+ 2·00
Dec.	1	7	27	7·2	»	0 8 22·23	20·64	— 1·59	»	91 49 46·10	47·41	+ 1·31
	4	7	15	16·7	»	0 8 19·47	17·89	— 1·58	»	91 49 17·42	18·84	+ 1·42
	10	6	51	45·8	»	0 8 24·50	23·06	— 1·44	»	91 47 8·54	10·76	+ 2·22
	11	6	47	52·7	»	0 8 26·87	25·32	— 1·55	»	91 46 39·15	40·28	+ 1·13
	12	6	43	59·4	»	0 8 29·33	27·98	— 1·35	»	91 46 4·92	7·21	+ 2·29
	13	6	40	6·3	»	0 8 32 24	31·03	— 1·21	»	91 45 29·66	31·56	+ 1·90
	14	6	36	14·2	»	0 8 36·07	34·48	— 1·59	»	91 44 50·66	53·32	+ 2·66
	18	6	20	48·1	»	0 8 53·52	52·44	— 1·08	»	91 41 51·38	54·63	+ 3·25
	19	6	16	57·4	»	0 8 59·06	57·66	— 1·40	»	91 40 59·75	63·57	+ 3·82
	20	6	13	7·6	»	0 9 5·06	3·48	— 1·58	»	91 40 7·91	10·12	+ 2·21
	21	6	9	18·1	»	0 9 11·23	9·68	— 1·55	»	91 39 12·77	14·08	+ 1·31
	22	6	5	28·4	»	0 9 17·61	16·28	— 1·33	»	91 38 11·67	15·55	+ 3·88
1850. Oct.	9	11	57	17·1	»	1 9 21·38	20·17	— 1·21		85 38 18·04	14·18	— 3·86
	11	11	48	49·9	»	1 8 45·94	44·98	— 0·96	—	——	—	—
	12	11	44	37·1	»	1 8 28·92	27·38	— 1·54	»	85 43 42·07	39·86	— 2·21
	14	11	36	10·2	»	1 7 53·75	52·22	— 1·53	»	85 47 17·70	15·99	— 1·71
	16	11	27	43·0	»	1 7 18·32	17·17	— 1·15	»	85 50 50·28	48·06	— 2·22
	18	11	19	16·6	»	1 6 43·61	42·32	— 1·29	»	85 54 19·86	18·01	— 1·25
	21	11	6	37·2	»	1 5 51·97	50·54	— 1·43	»	85 59 31·28	28·69	— 2·59

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF SATURN, (*Continued.*)

Mean Solar Time of Observation.					Point observ-ed.	A R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1850.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Oct.	22	11	2	24·4	C	1 5 34·99	33·46	— 1·53	C	86 1 12·21	10·27	— 1·94
	26	10	45	33·7	”	1 4 27·68	26·25	— 1·43	”	86 7 49·05	46·03	— 3·02
	29	10	32	57·7	”	1 3 39·03	37·24	— 1·79	”	86 12 32·91	31·03	— 1·88
	30	10	28	45·5	”	1 3 22·76	21·22	— 1·54	—	——	—	—
	31	10	24	33·7	”	1 3 6·99	5·38	— 1·61	”	86 15 37·66	34·30	— 3·63
Nov.	2	10	16	10·8	”	1 2 35·71	34·26	— 1·45	”	86 18 37·38	31·44	— 5·94
	11	9	38	36·	—	——	—	—	”	86 30 29·59	26·59	— 3·00
	12	9	34	29·8	”	1 0 13·43	12·01	— 1·42	”	86 31 42·50	36·67	— 5·83
	13	9	30	21·4	”	0 59 60·72	59·21	— 1·51	S L	86 32 50·38	44·90	— 5·48
	14	9	26	12·8	”	0 59 48·12	46·70	— 1·42	N L	86 33 51·58	51·04	— 0·54
	18	9	9	42·3	”	0 58 61·11	59·57	— 1·54	C	86 37 58·20	54·44	— 3·76
	19	9	5	35·4	”	0 58 50·13	48·55	— 1·58	”	86 38 52·54	49·83	— 2·71
	20	9	1	28·7	”	0 58 39·40	37·87	— 1·53	”	86 39 45·13	43·02	— 2·11
	21	8	57	22·4	”	0 58 28·80	27·51	— 1·29	”	86 40 37·05	33·93	— 3·12
	22	8	53	16·6	”	0 58 18·78	17·47	— 1·31	”	86 41 25·31	22·64	— 2·67
	23	8	49	11·0	”	0 58 9·33	7·78	— 1·55	”	86 42 11·04	8·96	— 2·08
	25	8	41	0·6	”	0 57 50·88	49·40	— 1·48	”	86 43 37·00	34·46	— 2·54
	26	8	36	56·0	”	0 57 42·06	40·73	— 1·33	”	86 44 16·02	13·82	— 2·20
	27	8	32	51·7	”	0 57 33·58	32·51	— 1·07	—	——	—	—
	28	8	28	48·2	”	0 57 25·92	24·46	— 1·46	”	86 45 25·24	25·05	— 0·19
Dec.	4	8	4	32·9	”	0 56 45·82	44·50	— 1·32	”	86 47 61·91	59·39	— 2·52
	5	8	0	31·7	”	0 56 40·61	39·17	— 1·44	”	86 48 19·72	16·25	— 3·47
	7	7	52	29·9	”	0 56 30·89	29·68	— 1·21	N L	86 48 43·44	42·33	— 1·11
	8	7	48	30·5	”	0 56 27·14	25·52	— 1·62	—	——	—	—
	9	7	44	30 1	”	0 56 23·09	21·76	— 1·33	S L	86 48 62·15	58·04	— 4·11
	10	7	40	31·1	”	0 56 19·58	18·41	— 1·17	C	86 49 4·44	2·07	— 2·37
	11	7	36	32·5	”	0 56 16·81	15·45	— 1·36	S L	86 49 7·97	3·42	— 4·55
	12	7	32	34·1	”	0 56 14·26	12·88	— 1·38	C	86 49 5·12	2·18	— 2·94
	13	7	28	36·2	”	0 56 12·15	10·72	— 1·43	”	86 48 61·80	58·36	— 3·44
	14	7	24	38·7	”	0 56 10·42	8·96	— 1·46	”	86 48 54·16	51·94	— 2·22
	16	7	16	44·0	”	0 56 7·76	6·66	— 1·10	N L	86 48 31·71	31·26	— 0·45
	17	7	12	47·8	”	0 56 7·46	6·11	— 1·35	C	86 48 20·39	17·00	— 3·39
	18	7	8	51·4	”	0 56 7·10	5·96	— 1·14	S L	86 48 3·98	0·24	— 3·74
	19	7	4	55·8	”	0 56 7·49	6·22	— 1·27	N L	86 47 43·08	40·81	— 2·27
	20	7	1	0 7	”	0 56 8·29	6·88	— 1·41	”	86 47 19·28	18·89	— 0·39
	21	6	57	6·3	”	0 56 9·40	8·04	— 1·36	S L	86 46 59·92	54·38	— 5·54
	26	6	37	37·7	”	0 56 20·75	19·33	— 1·42	—	——	—	—
1851.												
Jan.	3	6	6	49·7	”	0 56 59·95	58·52	— 1·43	C	86 37 46·33	45·33	— 1·00
	4	6	3	0·4	”	0 57 6·66	5·21	— 1·45	”	86 36 49·73	45·72	— 4·01
	13	5	28	54·1	”	0 58 23·87	22·94	— 0·93	N L	86 26 9·87	3·55	— 6·32
	15	5	21	24·3	”	0 58 46·08	44·36	— 1·72	—	——	—	—
	16	5	17	39·1	”	0 58 56·74	55·62	— 1·12	C	86 21 52·97	48·81	— 4·16
	17	5	13	55·3	”	0 59 8·45	7·24	— 1·21	”	86 20 22·18	19·65	— 2·53
	18	5	10	10·7	”	0 59 20·40	19·22	— 1·18	—	——	—	—
	20	5	2	43·6	”	0 59 44·97	44·24	— 0·73	”	86 15 42·16	39·53	— 2·63
	24	4	47	54·1	”	1 0 39·50	38·45	— 1·05	—	——	—	—
	25	4	44	13·5	”	1 0 54·53	52·86	— 1·67	—	——	—	—
	28	4	33	9·9	”	1 1 38·81	38·08	— 0·73	—	——	—	—
Nov.	8	10	45	0·4	”	1 54 18·72	17·80	— 0·92	S L	81 12 24·66	13·50	—11·16
	17	10	7	16·5	”	1 51 50·39	49·52	— 0·87	N L	81 24 45·52	38·90	— 6·62
	20	9	54	43·3	”	1 51 4·84	3·78	— 1·06	S L	81 28 34·60	21·62	—12·98
	21	9	50	32·6	”	1 50 50·00	49·02	— 0·98	N L	81 29 39·46	32·58	— 6·88

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF SATURN, *(Continued.)*

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed.	N. P. D. from Observation.	N P D. from N. A.	Error of N. A.
1851.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Nov.	22	9	46	22·3	C	1 50 35·41	34·52	— 0·89	S L	81 30 53·92	42·76	—11·16
	24	9	38	2·5	„	1 50 7·38	6·32	— 1·06	N L	81 32 63·71	54·93	— 8·78
	25	9	33	52·7	„	1 49 53·61	52·63	— 0·98	S L	81 33 69·24	58·81	—10·43
	27	9	25	34·5	„	1 49 27·25	26·15	— 1·10	N L	81 36 8·46	0·91	— 7·55
	28	9	21	25·8	„	1 49 14·35	13·36	— 0·99	C	81 36 67·10	59·11	— 7·99
Dec.	2	9	4	53·7	„	1 48 26·42	25·38	— 1·04	„	81 40 41·31	31·99	— 9·32
	3	9	0	46·6	„	1 48 15·27	14·20	— 1·07	„	81 41 30·37	20·04	—10·33
	4	8	56	40·2	„	1 48 4·32	3·36	— 0·96	„	81 42 16·48	5·99	—10·49
	5	8	52	33·5	„	1 47 53·77	52·86	— 0·91	„	81 42 56·37	49·83	— 6·54
	6	8	48	27·7	„	1 47 43·75	42·52	— 1·23	„	81 43 38·25	31·49	— 6·76
	9	8	36	11·6	„	1 47 15·30	14·41	— 0·89	„	81 45 31·63	23·23	— 8·40
	10	8	32	6·5	„	1 47 6·30	5·70	— 0·60	„	81 45 64 39	56·05	— 8·34
	15	8	11	49·9	„	1 46 28·90	27·81	— 1·09	„	81 48 13·93	5·82	— 8·11
	16	8	7	47·5	„	1 46 22·37	21·38	— 0·99	—	——	—	—
	17	8	3	45·4	„	1 46 16·62	15·36	— 1·26	—	——	—	—
	18	7	59	42·	—	——	—	—	C	81 48 66·06	55·65	—10·41
	19	7	55	42·2	„	1 46 5·30	4·49	— 0·81	—	——	—	—
	20	7	51	41·8	„	1 45 60·61	59·66	— 0·95	„	81 49 24·15	16·87	— 7·28
	22	7	43	42·3	„	1 45 52·19	51·23	— 0·96	„	81 49 36·69	28·35	— 8·34
	24	7	35	42·5	„	1 45 45·04	44·45	— 0·59	„	81 49 36·83	30·16	— 6·67
	26	7	27	46·3	„	1 45 40·18	39·33	— 0·85	—	——	—	—
1852.												
Jan.	26	5	28	6·6	„	1 47 53·94	52·83	— 1·11	—	——	—	—
	27	5	24	21·4	„	1 48 4·51	3·62	— 0·89	—	——	—	—
	30	5	13	7·8	„	1 48 38·95	38·26	— 0·69	„	81 21 50·03	45·17	— 4·86
Feb.	2	5	1	56·7	„	1 49 16·24	16·24	0·00	—	——	—	—
	3	4	58	15·1	„	1 49 30·68	29·63	— 1·05	„	81 15 54·81	47·58	— 7·23
	4	4	54	32·7	„	1 49 44·19	43·38	— 0·81	—	——	—	—
Nov.	22	10	38	42·	—	——	—	—	„	76 38 28·36	21·02	— 7·34
	23	10	34	30·8	„	2 45 47·78	46·99	— 0·79	„	76 39 40 83	33·07	— 7·76
	24	10	30	16·7	„	2 45 29·89	29·42	— 0·47	„	76 40 52·15	44·44	— 7·71
	25	10	26	3·4	„	2 45 12·55	12·04	— 0·51	„	76 41 61·92	54·37	— 7·55
Dec.	7	9	35	42·3	„	2 42 1·74	1·29	— 0·45	„	76 54 24·39	16·68	— 7·71
	8	9	31	32·2	„	2 41 47·95	47·12	— 0·83	„	76 55 16·59	9·15	— 7·44
	9	9	27	22·7	„	2 41 33·87	33·25	— 0·62	„	76 56 7·20	0·00	— 7·20
	10	9	23	12·9	„	2 41 19·95	19·65	— 0·30	„	76 56 56·10	19·18	— 6·92
	11	9	19	3·4	„	2 41 7·00	6·47	— 0·53	„	76 57 43·76	36·66	— 7·10
	15	9	2	30·7	„	2 40 17·42	16·91	— 0·51	—	——	—	—
	16	8	58	22·9	„	2 40 5·92	5·39	— 0·53	„	77 1 13·93	7·51	— 6·42
	20	8	41	57·9	„	2 39 23·77	22·98	— 0·79	„	77 3 29·56	22·81	— 6·75
	27	8	13	26·7	„	2 38 23·79	23·58	— 0·21	—	——	—	—
	28	8	9	24·1	„	2 38 17·17	16·69	— 0·48	—	——	—	—

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF URANUS.

1848.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Oct.	17	11	29	41·5	C	1 15 8·88	18·63	+ 9·75	C	82 43 106·58	52·96	—53·62
	18	11	25	36·4	„	1 14 59·42	69·56	+10·14	„	82 44 100·54	47·28	—53·26
	20	11	17	26·6	„	1 14 41·86	51·46	+ 9·60	„	82 46 87·51	35·46	—52·05
Nov.	18	9	19	31·3	„	1 10 47·38	57·01	+ 9·63	„	83 9 96·45	45·30	—51·15

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF URANUS, *(Continued.)*

Mean Solar Time of Observation.	Point observed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1848. d. h. m. s.		h. m. s.	s.	s.		° ′ ″	″	″
Dec. 15 7 31 17·5	C	1 8 42·98	52·52	+ 9·54	C	83 21 80·81	30·37	—50·44
18 7 19 23·9	”	1 8 36·98	46·43	+ 9·45	”	83 22 52·08	0·68	—51·40
20 7 11 28 8	”	1 8 33·85	43·29	+ 9·44	”	83 22 65·06	15·27	—49·79
21 7 7 31·9	”	1 8 32·65	42·00	+ 9·35	”	83 22 70·56	20·36	—50·20
1849.								
Aug. 12 16 13 6·1	”	1 38 9·48	19·50	+10·02	”	80 24 111·54	58·19	—53·35
16 15 57 12·2	”	1 37 59·70	69·72	+10·02	”	80 26 53·04	0·00	—53·04
19 15 45 15·2	”	1 37 50·31	60·53	+10·22	”	80 26 107·56	56·92	—50·64
21 15 37 16·0	”	1 37 42·69	53·56	+10·87	”	80 27 89·51	39·79	—49·72
22 15 33 16·	—	——	—	—	”	80 28 54·32	2·63	—51·69
24 15 25 17·6	”	1 37 31·75	41·81	+10·06	”	80 28 103·22	51·16	—52·06
Oct. 10 12 14 52·6	”	1 31 54·26	64·39	+10·13	”	81 1 109·65	55·90	—53·75
12 12 6 42·3	”	1 31 35·70	46·12	+10·42	”	81 3 95·72	42·25	—53·47
13 12 2 37·9	”	1 31 26·71	36·94	+10·23	”	81 4 90·94	35·53	—55·41
18 11 42 11·9	”	1 30 40·64	50·82	+10·18	”	81 9 55·83	2·89	—52·94
19 11 38 6·8	”	1 30 31·28	41·67	+10·39	”	81 9 111·37	56·35	—55·02
20 11 35 2·1	”	1 30 22·15	32·46	+10·31	”	81 10 104·97	49·74	—55·23
22 11 25 51·6	”	1 30 3·69	14·09	+10·40	”	81 12 89·94	29·40	—60·54
23 11 21 46·5	”	1 29 54·58	64·94	+10·36	”	81 13 82·74	29·22	—53·52
24 11 17 41·4	”	1 29 45·46	55·79	+10·33	”	81 14 72·40	21·99	—50·41
25 11 13 36·6	”	1 29 36·09	46·69	+10·60	”	81 15 70·60	14·83	—55·77
26 11 9 31·7	”	1 29 27·71	37·61	+ 9·90	”	81 16 61·05	7·33	—53·72
29 10 57 16·4	”	1 29 0·08	10·63	+10·55	”	81 18 96·50	43·28	—53·22
30 10 53 12·4	”	1 28 51·39	61·72	+10·33	”	81 19 88·60	34·75	—53·85
31 10 49 7·8	”	1 28 42·78	52·87	+10·09	”	81 20 79·97	25·86	—54·11
Nov. 1 10 45 3·0	”	1 28 33·86	44·08	+10·22	”	81 21 71·51	16·64	—54·87
2 10 40 58·2	”	1 28 25·06	35·32	+10·26	”	81 22 60·90	7·11	—53·79
9 10 12 27·6	”	1 27 25·77	36·05	+10·28	”	81 27 102·03	48·06	—53·97
12 10 0 15·8	”	1 27 1·65	11·89	+10·24	”	81 30 59·99	6·64	—53·35
13 9 56 12·4	”	1 26 53·91	64·02	+10·11	”	81 30 104·97	51·70	—53·27
19 9 31 51·9	”	1 26 9·02	19·11	+10·09	”	81 35 60·66	8·11	—52·55
20 9 27 49·0	”	1 26 1·93	12·03	+10·10	”	81 35 102·65	48·39	—54·26
21 9 23 46·1	”	1 25 54·88	5·08	+10·20	”	81 36 79·96	27·92	—52·04
22 9 19 43·5	”	1 25 48·09	58·24	+10·15	”	81 37 58·77	6·60	—52·17
23 9 15 41·1	”	1 25 41·30	51·55	+10·25	”	81 37 97·63	44·55	—53·08
24 9 11 38·4	”	1 25 34·79	44·99	+10·20	”	81 38 73·94	21·60	—52·34
28 8 55 30·0	”	1 25 9·92	20·15	+10·23	”	81 40 95·66	41·58	—54·08
29 8 51 28·4	”	1 25 4·24	14·30	+10·06	—	——	—	—
30 8 47 26·4	”	1 24 58·22	68·61	+10·39	”	81 41 99·05	46·27	—52·78
Dec. 4 8 31 21·9	”	1 24 37·18	47·33	+10·15	”	81 43 97·97	44·67	—53·30
8 8 15 19·7	”	1 24 18·60	28·63	+10·03	”	81 45 81·57	27·59	—53·98
10 8 7 19·0	”	1 24 10·04	20·28	+10·24	”	81 46 65·21	12·91	—52·30
11 8 3 19·8	”	1 24 6·37	16·37	+10·00	”	81 46 86·56	34·04	—52·52
12 7 59 20·3	”	1 24 2·58	12·64	+10·06	”	81 46 107·18	54·05	—53·13
13 7 55 20·6	”	1 23 58·93	69·08	+10·15	”	81 47 66·03	13·18	—52·85
18 7 35 26·1	”	1 23 43·75	53·99	+10·24	”	81 48 83·97	31·83	—52·14
20 7 27 29·6	”	1 23 39·33	49·24	+ 9·91	”	81 48 107·64	55·55	—52·09
21 7 23 31·8	”	1 23 37·13	47·15	+10·02	”	81 49 58·77	5·84	—52·93
22 7 19 33·8	”	1 23 35·13	45·25	+10·12	”	81 49 67·70	14·91	—52·79
1850.								
Jan. 2 6 36 10·5	”	1 23 27·07	36·97	+ 9·90	”	81 49 90·99	38·67	—52·32
3 6 32 15·0	”	1 23 27·54	37·36	+ 9·82	”	81 49 86·48	33·83	—52·65
5 6 24 24·5	”	1 23 28·79	38·76	+ 9·97	”	81 49 73·01	20·86	—52·15
10 6 4 52·5	”	1 23 36·10	45·66	+ 9·56	”	81 48 81·39	28·16	—53·23

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF URANUS, (*Continued.*)

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1850.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Oct.	26	11	26	18·2	C	1 45 18·84	29·56	+10·72	C	79 42 77·21	20·35	—56·86
Nov.	20	9	44	25·0	”	1 41 42·70	53·52	+10·82	—	——	—	—
	22	9	36	18·5	”	1 41 27 78	38·54	+10·76	”	80 3 95·40	39·81	—55·59
	25	9	24	8·9	”	1 41 6·24	16·96	+10·72	”	80 5 92·74	38·01	—54·73
	28	9	12	1·0	”	1 40 45·86	56·54	+10·68	”	80 7 82·43	29·51	—52·92
Dec.	5	8	43	47·2	”	1 40 3·23	13·81	+10·58	”	80 11 75·45	21·15	—54·30
	7	8	35	44·1	”	1 39 52·19	62·98	+10·79	”	80 12 74·99	19·43	—55·56
	10	8	23	41·7	”	1 39 37·33	47·94	+10·61	”	80 13 92·87	39·73	—53·14
	11	8	19	41·2	”	1 39 32·62	43·25	+10·63	”	30 14 56·21	4·57	—51·64
	12	8	15	41·0	”	1 39 28·24	38·75	+10·51	”	80 14 83·41	28·35	—55·06
	13	8	11	40·8	”	1 39 23·86	34·42	+10·56	”	80 14 107·50	51·16	—56·34
1851.												
Jan.	2	6	52	14·2	”	1 38 35·33	45·90	+10·57	”	80 18 100·22	46·55	—53·67
	3	6	48	17·8	”	1 38 34·94	45·48	+10·54	”	80 18 99·73	46·76	—52·97
	4	6	44	22·0	”	1 38 34·98	45·26	+10·28	”	80 18 99·84	45·81	—54·03
	6	6	36	29·8	”	1 38 34·85	45·41	+10·56	”	80 18 94·68	40·50	—54·18
	7	6	32	34·8	”	1 38 35·54	45·77	+10·23	”	80 18 90·17	36·15	—54·02
	8	6	28	39·2	”	1 38 36·20	46·35	+10·15	”	80 18 83·87	30·61	—53·26
	9	6	24	44·2	”	1 38 36·64	47·12	+10·48	”	80 18 77 72	23·98	—53·74
	11	6	16	54·7	”	1 38 39·04	49·25	+10·21	”	80 18 61·44	7·23	—54·21
	14	6	5	11·4	”	1 38 43·82	53·91	+10·09	”	80 17 86·90	33·70	—53·20
	15	6	1	17·1	”	1 38 45·47	55·86	+10·39	”	80 17 74·11	20·31	—53·80
	16	5	57	23·7	”	1 38 47·79	58·00	+10·21	”	80 17 62·14	5·82	—56·32
	17	5	53	30·4	”	1 38 50·00	60·34	+10·34	”	80 16 105·86	50·23	—55·63
Nov.	8	10	50	3·6	”	1 59 22·68	34·19	+11·51	”	78 21 104·42	47·35	—57·07
	17	10	13	28·7	”	1 58 3·61	15·08	+11·47	”	78 28 102·93	46·14	—56·79
	20	10	1	16·1	”	1 57 38·76	50·15	+11·39	”	78 30 116·17	57·61	—58·56
	21	9	57	12·0	”	1 57 30·57	42·03	+11·46	”	78 31 98·84	40·39	—58·45
	22	9	53	8·1	”	1 57 22·41	34·03	+11·62	”	78 32 80·46	22·56	—57·90
	25	9	41	57·0	”	1 56 59·25	70·64	+11·39	”	78 34 82·59	25·57	—57·02
	28	9	28	47·2	”	1 56 37·00	48.34	+11·34	”	78 36 80·09	22·78	—57·31
Dec.	4	9	4	30·7	”	1 55 56·12	67·24	+11·12	”	78 39 113·63	57·63	—56·00
	5	9	0	27·9	”	1 55 49·48	60·88	+11 40	”	78 40 87·00	30·71	—56·29
	6	8	56	25·9	”	1 55 43·26	54·66	+11·40	”	78 41 59·27	3·01	—56·26
	8	8	48	21·8	”	1 55 31·41	42·68	+11·27	”	78 42 60·95	5·06	—55·89
	9	8	44	20·5	”	1 55 25·47	36·92	+11·45	”	78 42 91·78	34·85	—56·93
	10	8	40	18·9	”	1 55 20·04	31·32	+11·28	”	78 43 59·94	3·65	—56·29
	15	8	20	14·6	”	1 54 54·90	65·74	+10·84	”	78 45 70·95	14·60	—56·35
	16	8	16	14·0	”	1 54 50·17	61·13	+10·96	—	——	—	—
	17	8	12	12·6	”	1 54 45·20	56·70	+11·50	—	——	—	—
	18	8	8	12·7	”	1 54 41 21	52·42	+11·21	”	78 46 78·19	21·95	—56·24
	19	8	4	12·6	”	1 54 37·06	48·32	+11·26	”	78 46 98·17	42·38	—55·79
	22	7	52	13·9	”	1 54 26·09	37:13	+11·04	”	78 47 93·91	38·00	—55·91
	24	7	43	15·7	”	1 54 19·46	30·58	+11·12	”	78 48 65·97	9·90	—56·07
	26	7	36	18·2	”	1 54 13·44	24·78	+11·34	—	——	—	—
1852.												
Jan.	15	6	18	25·1	”	1 54 58·39	70·01	+11·62	—	——	—	—
Nov.	15	10	34	42·1	”	2 14 27·29	39·10	+11·81	”	76 59 79·23	21·17	—58·06
	20	10	14	18·4	”	2 13 42·91	55·13	+12·22	”	77 3 59·26	1·70	—57·56
	23	10	2	18·	—	——	—	—	”	77 5 66·34	8·40	—57·94

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF URANUS, (Continued.)

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1852.	d.	h.	m.	s.		h. m. s.	s.	s.		° ′ ″	″	″
Nov.	24	9	58	1·5	C	2 13 9·40	21·58	+12·18	C	77 5 109·46	49·72	—59·74
	25	9	53	57·4	„	2 13 1·26	13·45	+12·19	„	77 6 89·08	30·34	—58·74
Dec.	7	9	5	18·7	„	2 11 33·12	45·02	+11·90	„	77 13 108·83	50·69	—58·14
	8	9	1	16·0	„	2 11 26·79	38·52	+11·73	„	77 14 79·11	22·79	—56·32
	9	8	57	13·8	„	2 11 20·19	32·17	+11·98	„	77 14 112·13	54·18	—57·95
	11	8	49	9·6	„	2 11 8·23	19·94	+11·71	„	77 15 110·88	54·48	—56·40
	16	8	29	2·5	„	2 10 40·77	52·15	+11·38	„	77 18 66·97	10·60	—56·37

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF NEPTUNE.

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1849.	d.	h.	m.	s.		h. m. s.	s.	s.		° ′ ″	″	″
Aug.	20	12	27	5·3	C	22 23 4·42	4·29	— 0·13	C	100 52 49·01	49·20	+ 0·19
	21	12	23	3·3	„	22 22 58·12	58·11	— 0·01	„	100 53 25·26	25·50	+ 0·24
	22	12	19	1·6	„	22 22 52·29	51·92	— 0·37	„	100 54 1·96	1·90	— 0·06
Sept.	11	10	58	20·4	„	22 20 49·04	48·96	— 0·08	„	101 5 54·47	55·65	+ 1·18
	12	10	54	18·8	„	22 20 43·35	43·06	— 0·29	„	101 6 28·99	29·67	+ 0·68
	13	10	50	17·2	„	22 20 37·44	37·19	— 0·25	„	101 7 1·84	3·42	+ 1·58
	18	10	30	8·3	„	22 20 8·73	8·41	— 0·32	„	101 8 45·94	47·84	+ 1·90
	24	10	6	0·4	„	22 19 35·83	35·63	— 0·20	„	101 12 51·83	53·92	+ 2·09
	27	9	53	57·5	„	22 19 20·14	20·14	0·00	„	101 14 20·11	21·77	+ 1·66
Oct.	1	9	37	54·1	„	22 19 0·58	0·45	— 0·13	„	101 16 13·09	12·68	— 0·41
	2	9	33	53·1	„	22 18 55·76	55·71	— 0·05	„	101 16 37·42	39·29	+ 1·87
	10	9	1	51·2	„	22 18 21·08	20·92	— 0·16	„	101 19 52·11	52·68	+ 0·57
	12	8	53	51·7	„	22 18 13·48	13·13	— 0·35	„	101 20 34·00	35·64	+ 1·64
	13	8	49	52·5	„	22 18 9·66	9·40	— 0·26	„	101 20 54·27	56·23	+ 1·96
	15	8	41	53·6	„	22 18 2·52	2·24	— 0·28	„	101 21 31·60	35·64	+ 4·04
	16	8	37	53·8	„	22 17 58·71	58·81	+ 0·10	„	101 21 51·61	54·46	+ 2·85
	17	8	33	54·5	„	22 17 55·34	55·49	+ 0·15	„	101 22 10·65	12·65	+ 2·00
	18	8	29	55·6	„	22 17 52·76	52·28	— 0·48	„	101 22 28·48	30·23	+ 1·75
	19	8	25	56·4	„	22 17 49·30	49·17	— 0·13	„	101 22 45·76	47·16	+ 1·40
	20	8	21	58·0	„	22 17 46·52	46·18	— 0·34	„	101 23 1·61	3·45	+ 1·84
	22	8	14	0·2	„	22 17 40·77	40·52	— 0·25	„	101 23 32·84	34·09	+ 1·25
	23	8	10	1·6	„	22 17 38·13	37·87	— 0·26	„	101 23 47·20	48·40	+ 1·20
	24	8	6	3·0	„	22 17 35·60	35·32	— 0·28	„	101 24 1·32	2·06	+ 0·74
	25	8	2	5·0	„	22 17 33·01	32·87	— 0·14	„	101 24 14·32	15·06	+ 0·74
	26	7	58	6·0	„	22 17 30·63	30·55	— 0·08	„	101 24 26·17	27·37	+ 1·20
	30	7	42	15·1	„	22 17 22·72	22·49	— 0·23	„	101 25 7·41	9·78	+ 2·37
	31	7	38	17·4	„	22 17 21·05	20·77	— 0·28	„	101 25 17·78	18·66	+ 0·88
Nov.	1	7	34	19·7	„	22 17 19·25	19·17	— 0·08	„	101 25 25·75	26·85	+ 1·10
	2	7	30	22·5	„	22 17 17·97	17·69	— 0·28	„	101 25 33·12	34·34	+ 1·22
	3	7	26	25·1	„	22 17 16·54	16·33	— 0·21	„	101 25 40·70	41·12	+ 0·42
	5	7	18	31·3	„	22 17 14·29	13·98	— 0·31	„	101 25 51·53	52·52	+ 0·99
	9	7	2	44·2	„	22 17 11·29	10·86	— 0·43	„	101 26 5·14	6·63	+ 1·49
	10	6	58	47·9	„	22 17 10·97	10·40	— 0·57	„	101 26 6·69	8·33	+ 1·64
	12	6	50	55·8	„	22 17 10·49	9·87	— 0·62	„	101 26 7·90	9·52	+ 1·62
	13	6	46	59·7	„	22 17 10·15	9·81	— 0·34	„	101 26 7·57	9·00	+ 1·43
	15	6	39	8·2	„	22 17 10·60	10·07	— 0·53	„	101 26 5·44	5·74	+ 0·30
	19	6	23	26·2	„	22 17 12·39	12·15	— 0·24	„	101 25 49·77	50·31	+ 0·54
	20	6	19	31·3	„	22 17 13·24	12·98	— 0·26	„	101 25 43·26	44·60	+ 1·34
	22	6	11	41·7	„	22 17 15·34	15·06	— 0·28	„	101 25 30·72	30·96	+ 0·24
	24	6	3	52·3	„	22 17 17·79	17·65	— 0·14	„	101 25 12·00	14·35	+ 2·35

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF NEPTUNE, (*Continued.*)

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1850.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Aug.	12	13	9	2·7	C	22 32 38·53	37·97	— 0·56	C	100 1 18·71	18·73	+ 0·02
	23	12	24	41·4	„	22 31 32·04	31·72	— 0·32	„	100 7 57·46	58·47	+ 1·01
	26	12	12	35·2	„	22 31 13 64	13·24	— 0·40	„	100 9 49·96	49·13	— 0·83
Sept.	4	11	36	16·3	„	22 30 17·77	17·56	— 0·21	„	100 15 19·21	20·15	+ 0·94
Oct.	2	9	43	33·5	„	22 27 39·99	39·10	— 0·89	—	——	—	—
	4	9	35	30·9	„	22 27 29·32	29·55	+ 0·23	„	100 31 38·59	38·46	— 0·13
	5	9	31	29·9	„	22 27 24·04	24·83	+ 0·79	„	100 32 5·38	5·12	— 0·26
	7	9	23	29·9	„	22 27 15·90	15·74	— 0·16	„	100 32 58·26	57·04	— 1·22
	9	9	15	29·	—	——	—	—	„	100 33 46·78	46·76	— 0·02
	10	9	11	29·5	„	22 27 2·96	2·77	— 0·19	„	100 34 11·10	10·79	— 0·31
	12	9	3	29·6	„	22 26 54·96	54·54	— 0·42	„	100 34 56·17	57·22	+ 1·05
	14	8	55	29·3	„	22 26 46·42	46·69	+ 0·27	„	100 35 41·31	41·44	+ 0·13
	15	8	51	30·3	„	22 26 43·19	42·94	— 0·25	„	100 36 2·01	2·56	+ 0·55
	21	8	27	34 3	„	22 26 22·90	22·45	— 0·45	„	100 37 56·45	56·48	+ 0·03
	22	8	23	35·1	„	22 26 19·58	19·46	— 0·12	„	100 38 12·93	13·30	+ 0·37
	26	8	7	40·4	„	22 26 8·48	8·36	— 0·12	„	100 39 13·14	13·86	+ 0·72
	28	7	59	44·2	„	22 26 3·89	3·47	— 0·42	„	100 39 38·36	40·16	+ 1·80
	29	7	55	46·0	„	22 26 1·47	1·25	— 0·22	„	100 39 51·18	52·27	+ 1·09
	30	7	51	47·8	„	22 25 59·25	59·24	— 0·01	„	100 40 3·14	4·72	+ 1·58
	31	7	47	50·1	„	22 25 57·65	57·11	— 0·54	„	100 40 13·83	14·41	+ 0·58
Nov.	1	7	43	52·4	„	22 25 55·54	55·22	— 0·32	„	100 40 24·42	24·43	+ 0·01
	2	7	39	54·3	„	22 25 53·59	53·45	— 0·14	„	100 40 34·00	33·72	— 0·28
	13	6	56	28·2	„	22 25 42·29	42·11	— 0·18	„	100 41 26·40	27·68	+ 1·28
	18	6	36	48·7	„	22 25 42·34	42·08	— 0·26	„	100 41 23 24	22·49	— 0·75
	19	6	32	53·0	„	22 25 42·56	42·46	— 0·10	„	100 41 18·27	19·18	+ 0·91
	20	6	28	57·4	„	22 25 43·00	42·97	— 0·03	„	100 41 13·99	15·13	+ 1·14
	21	6	25	2·1	„	22 25 43·53	43·61	+ 0·08	„	100 41 12·18	10·34	— 1·84
	22	6	21	7·0	„	22 25 44·21	44·39	+ 0·18	„	100 41 3·44	4·76	+ 1·32
	25	6	9	22·1	„	22 25 47·44	47·48	+ 0·04	„	100 40 43·96	43·58	— 0·38
	26	6	5	27·8	„	22 25 48·97	48·76	— 0·21	„	100 40 35·96	35·02	— 0·94
	27	6	1	33·5	„	22 25 50·48	50·19	— 0·29	„	100 40 23·97	25·70	+ 1·73
	28	5	57	38·8	„	22 25 51·73	51·73	0·00	„	100 40 11·52	15·64	+ 4·12
1851.												
Aug.	28	12	14	10·0	„	22 39 44·60	45·03	+ 0·43	„	99 23 27·50	30·84	+ 3·34
Sept.	19	10	45	27·8	„	22 37 31·73	31·71	— 0·02	„	99 36 53·38	54·13	+ 0·75
	20	10	41	26·1	„	22 37 25·89	25·93	+ 0·04	„	99 37 27·83	28·41	+ 0·58
Oct.	1	9	57	10·7	„	22 36 25·71	26·04	+ 0·33	„	99 43 23·88	21·45	— 2·43
	2	9	53	10·7	„	22 36 21·18	20·98	— 0·20	„	99 43 50·93	51·10	+ 0·17
	13	9	9	5·2	„	22 35 30·77	30·25	— 0·52	„	99 48 42·22	44·44	+ 2·22
	16	8	57	5·2	„	22 35 18·68	18·18	— 0·50	„	99 49 54·21	53·34	— 0·87
	17	8	53	5·5	„	22 35 14·83	14·39	— 0·44	„	99 50 12·28	14·97	+ 2·69
	24	8	25	10·7	„	22 34 51·32	50·78	— 0·54	„	99 52 29·80	28·38	+ 1·42
	25	8	21	11·4	„	22 34 47·96	47·80	— 0·16	„	99 52 47·50	45·00	— 2·50
	27	8	13	14·0	„	22 34 41·96	42·09	+ 0·13	„	99 53 18·64	17·19	— 1·45
	28	8	9	16·1	„	22 34 40·03	39·48	— 0·55	„	99 53 31·53	31·98	+ 0·45
	29	8	5	17·2	„	22 34 37·21	36·94	— 0·27	„	99 53 43·99	46·59	+ 2·60
1852.												
Oct.	1	10	2	46·7	„	22 45 1·94	2·64	+ 0·70	„	98 55 60·05	54·23	— 5·82
	2	9	58	46·1	„	22 44 56·76	57·49	+ 0·73	„	98 56 31·20	24·89	— 6·31
	4	9	50	43 8	„	22 44 46·36	47·35	+ 0·99	„	98 57 29·72	24·83	— 4·89

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF NEPTUNE, *(Continued.)*

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1852.	*d*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ′ ″	″	″
Oct.	5	9	46	43·0	C	22 44 41·65	42·38	+ 0·73	C	98 57 61·75	54·25	— 7·50
	11	9	22	39·9	„	22 44 13·94	14·26	+ 0·32	„	99 0 45·92	39·89	— 6·03
	12	9	18	39·3	„	22 44 9·25	9·85	+ 0·60	„	99 1 11·80	5·65	— 6·15
	14	9	10	39·3	„	22 44 0·91	1·27	+ 0·36	„	99 1 58·79	55·62	— 3·17
	15	9	6	39·1	„	22 43 56·47	57·12	+ 0·65	„	99 2 26·17	19·81	— 6·36
	25	8	26	44·3	„	22 43 20·58	21·02	+ 0·44	„	99 5 51·37	47·35	— 4·02
	26	8	22	45·3	„	22 43 17·99	18·00	+ 0·01	„	99 6 8·38	4·58	— 3·80
	27	8	18	46·1	„	22 43 14·57	15·08	+ 0·51	„	99 6 25·11	21·11	— 4·00
	29	8	10	49·0	„	22 43 9·05	9·54	+ 0·49	„	99 6 55·26	52·12	— 3·14

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF IRIS.

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1851.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*				° ′ ″		
Oct.	16	9	59	42·4	C	23 38 6·10	—	—	C	81 8 20·02	—	—
	17	9	55	20·3	„	23 37 39·86	—	—	„	81 15 48·62	—	—
	24	9	25	39·3	„	23 35 29·81	—	—	„	82 5 42·69	—	—
	25	9	21	33·1	„	23 35 19·65	—	—	„	82 12 21·09	—	—
	27	9	13	27·8	„	23 35 5·62	—	—	„	82 25 11·77	—	—
	28	9	9	28·1	„	23 35 2·04	—	—	„	82 31 19·36	—	—
	29	9	5	31·2	„	23 35 1·06	—	—	„	82 37 18·45	—	—
	30	9	1	35·3	„	23 35 1·33	—	—	„	82 43 6·65	—	—
Nov.	17	7	57	20·8	„	23 41 33·69	—	—	„	83 46 32·61	—	—

RIGHT ASCENSION AND NORTH POLAR DISTANCE OF THE CENTRE OF HEBE.

Mean Solar Time of Observation.					Point observ-ed.	A. R. from Observation.	A. R. from N. A.	Error of N. A.	Point observ-ed.	N. P. D. from Observation.	N. P. D. from N. A.	Error of N. A.
1851.	*d.*	*h.*	*m.*	*s.*		*h. m. s.*	*s.*	*s.*		° ″ ′	″	″
July.	2	12	47	2·2	C	19 27 58·35	57·13	— 1·22	C	98 1 22·00	19·70	— 2·30
	22	11	9	32·	„	—	—	—	„	100 43 26·53	25·10	— 1·43

A

SUBSIDIARY CATALOGUE

OF

1440 STARS

SELECTED FROM THE

BRITISH ASSOCIATION CATALOGUE,

REDUCED TO JANUARY 1st, 1850.

FROM

OBSERVATIONS MADE AT MADRAS,

IN THE YEARS, 1849—53.

N. B.—The Stars are arranged as usual in the order of their Right Ascension ; it therefore happens that a few of the numbers, as ven in the B. A. C., are transposed ; every such transposed number is placed between ( ) in order to catch the eye.

No. from B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Obser-vations.	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Obser-vations.	Mean Date of Observa-tion.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800+
13	7·8	0	2	16·13	+3·084	—0·011	4	44	26	36·21	—20·05	—0·06	4	49·96
15	6·6		2	21·95	3·042	—0·063	4	153	7	56·28	20·05	—	5	49·76
22	7·4		3	42·54	3·052	—	4	131	12	26·91	20·05	—	4	49·76
31	6·9		6	47·72	3·012	—	4	145	54	10·00	20·05	—	4	49·79
34	6·8		7	11·43	3·026	—0·070	2	136	52	6·81	20·05	+0·08	2	52·85
35	6·1		7	15·12	3·063	—	3	100	24	12·00	20·05	—	4	49·70
38	7·3		7	42·65	3·032	—	4	130	55	46·99	20·04	—	4	50·23
41	7·3		7	58·23	3·030	—	3	131	17	7·98	20·04	—	3	49·75
51	6·3		9	14·85	3·129	—	4	42	53	10·30	20·04	—	4	49·77
54	6·9		9	47·05	3·140	—	5	39	24	2·06	20·04	—	5	50·78
65	7·3		12	35·58	3·203	—	4	28	57	12·96	20·03	—	4	49·70
76	7·6		15	22·47	2·903	—	4	151	52	2·57	20·01	—	5	49·83
78	6·9		16	7·22	3·160	—	4	46	34	1·34	20·01	—	4	49·77
79	6·2		16	11·78	3·188	—	4	38	48	41·06	20·01	—	4	49·94
83	6·1		17	0·71	3·199	—	4	37	47	4·54	20·00	—	4	49·86
98	6·8		19	43·22	3·102	—	4	74	48	20·97	19·98	—	4	49·71
113	6·6		22	26·07	3·080	—	5	85	58	11·88	19·96	—	5	49·70
120	6·6		23	28·08	3·159	—	4	57	14	50·40	19·95	—	4	49·73
123	7·1		23	57·42	3·256	—0·012	4	37	0	49·71	19·95	+0·02	4	49·78
125	6·7		24	25·99	3·465	0·000	4	19	50	48·59	19·94	—0·02	4	49·83
148	5·9		27	57·66	3·347	—	3	30	30	2·38	19·91	—	4	49·81
149	6·8		28	8·79	3·107	—	2	77	36	43·99	19·90	—	3	49·79
157	7·0		29	8·27	2·770	+0·018	4	150	32	35·59	19·89	—0·41	4	49·79
165	7·0		30	53·33	3·274	—	4	41	28	15·08	19·87	—	4	49·84
175	6·1		33	9·72	3·490	—	4	24	40	34·33	19·85	—	4	49·85
177	7·0		33	26·85	3·100	—	4	81	27	55·01	19·84	—	3	49·79
181	7·0		33	52·55	3·235	—	4	50	7	58·33	19·84	—	4	49·84
188	6·8		34	55·59	2·754	+0·020	4	147	19	38·23	19·82	+0·03	4	49·76
193	6·6		35	56·60	2·694	—	4	151	5	1·08	19·81	—	4	49·89
195	6·4		36	2·71	2·595	—	5	156	17	34·30	19·81	—	3	49·92
197	6·9		36	7·38	3·296	—	4	42	57	31·55	19·81	—	4	49·71
224	7·5		41	7·09	3·197	—	4	62	5	58·16	19·73	—	4	49·70
226	6·8		41	13·96	3·327	—	4	43	3	14·29	19·73	—	4	49·70
245	7·9		46	34·83	3·369	—	4	42	8	9·44	19·64	—	4	49·71
255	6·3		47	46·65	3·541	—	3	30	27	1·67	19·62	—	4	49·79
261	6·1		49	4·37	3·695	—	4	24	27	36·36	19·60	—	4	49·86
263	8·0		49	10·67	3·211	—	4	63	48	48·75	19·60	—	4	49·70
276	6·9		52	7·51	2·515	+0·043	6	151	30	29·63	19·54	—0·11	6	49·82
277	7·3		52	18·79	2·855	—	4	125	26	52·20	19·54	—	6	49·80
280	6·9		54	9·09	4·132	—	4	16	26	6·10	19·50	—	4	49·89
282	6·6		54	24·87	3·621	—	3	29	43	57·95	19·49	—	4	49·82
294	6·0		56	3·36	2·721	+0·044	4	137	12	18·98	19·46	+0·13	4	49·72
297	6·7		56	10·88	3·335	—	5	50	48	51·53	19·46	—	4	49·77
299	6·2		56	16·11	3·250	—	5	61	8	34·04	19·45	—	6	49·79
302	6·5		56	57·70	3·688	+0·014	4	28	2	32·95	19·44	0·00	4	49·94
306	6·8		57	28·04	2·844	—	4	124	20	15·68	19·43	—	4	49·80
309	6·7		57	41·61	2·691	—	4	138	44	47·97	19·42	—	4	49·86
326	7·8	1	0	35·98	2.838	—	4	123	36	55·41	19·36	—	4	49·75
335	6·2		1	46·57	3·782	—	4	26	35	47·38	19·33	—	4	49·77
355	8·9		4	5·65	2·831	—	3	123	2	50·83	19·28	—	3	49·91

No. from B. A. C.	Magnitude.	Right Ascension January 1, 1850.			Annual Precession.	Proper Motion.	No. of Obser-vations.	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Obser-vations.	Mean Date of Observa-tion.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800 +
371	7·0	1	6	23·59	+ 3·014	—	4	98	25	4·34	—19·22	—	4	49·87
375	7·6		7	30·16	2·955	—	4	106	36	46·40	19·19	—	4	49·87
377	7·0		7	52·47	3·424	—	3	47	51	12·32	19·18	—	3	50·66
379	7·7		8	6·17	3·994	—	2	22	58	34·07	19·18	—	2	51·01
383	8·0		8	51·87	2·475	—	4	146	25	36·83	19·16	—	4	49·81
407	7·4		14	57·89	2·627	—	3	135	55	37·63	18·99	—	5	49·78
417	7·7		16	24·94	2·316	—0·038	3	149	54	39·01	18·95	+0·03	4	49·86
445	8·4		21	45·49	2·794	—	4	120	40	14·24	18·79	—	4	49·76
450	6·9		22	33·88	3·988	—	3	27	10	52·42	18·77	—	4	49·85
455	7·0		23	58·56	3·210	—	3	73	49	9·43	18·72	—	3	49·74
472	6·8		27	5·15	3·072	—	4	89	48	50·92	18·62	—	4	49·76
482	5·4		28	21·37	3·851	—	4	32	47	21·63	18·58	—	4	49·84
501	5·7		31	41·11	3·548	—	4	47	27	48·28	18·47	—	4	49·75
514	6·5		33	10·98	3·367	—	4	60	42	48·84	18·42	—	4	49·75
516	5·9		33	23·98	3·435	—	4	55	30	48·72	18·41	—	4	49·83
524	7·1		34	22·42	3·214	—	4	74	58	49·77	18·38	—	4	49·93
530	7·7		36	31·79	2·241	—	4	146	37	27·16	18·30	—	4	49·87
531	6·1		36	39·59	2·060	+0·035	4	151	32	43·72	18·30	—0·15	4	49·96
543	7·6		39	30·35	2·023	—0·015	4	151	46	19·64	18·19	0·00	4	49·81
547	6·5		39	58·23	3·681	—	4	42	51	8·56	18·17	—	4	49·82
562	7·2		43	16·69	3·783	—	4	39	16	8·35	18·05	—	4	49·79
575	6·4		45	53·17	3·570	—	3	50	2	7·53	17·95	—	4	49·80
588	5·9		48	37·45	4·316	—	4	26	6	40·70	17·84	—	1	49·82
596	4·8		50	7·31	2·269	+0·084	4	142	21	24·62	17·78	—0·27	4	49·93
599	6·5		50	29·09	1·951	—	4	151	2	47·19	17·77	—	4	49·81
602	6·1		50	59·06	1·920	—	5	151	35	55·54	17·75	—	4	49·87
620	6·6		53	26·86	4·395	—	4	25	37	13·67	17·65	—	4	49·81
631	7·3		55	13·47	3·100	—	4	87	22	19·12	17·57	—	4	49·78
636	5·9		55	45·43	2·885	—	4	106	1	50·22	17·55	—	5	49·86
651	6·4		59	39·52	5·296	+0·016	4	16	40	54·54	17·38	+0·03	4	49·92
661	7·0	2	1	47·72	3·606	—	2	51	40	17·64	17·29	—	3	49·85
662	7·5		1	48·50	3·606	—	2	51	40	2·73	17·29	—	1	49·85
706	5·6		9	37·57	3·831	—	3	43	18	55·35	16·93	—	4	49·84
714	6·3		11	0·26	3·836	—0·008	4	43	22	53·25	16·87	0·00	6	49·84
728	7·5		15	12·03	3·203	—	4	79	50	57·95	16·71	—	4	49·86
738	7·3		16	9·04	3·197	—	4	80	24	37·10	16·62	—	4	49·81
761	7·1		20	39·32	3·682	—	5	51	32	6·92	16·40	—	5	49·85
764	6·1		21	35·10	3·192	—	5	81	6	23·50	16·35	—	5	49·90
776	{ 8·6 5·8 }		23	{ 36·21 45·02 }	} 3·093	—	{ 3 4 }	88	23	{ 51·59 59·80 }	16·24	—	{ 3 4 }	49·87
779	7·1		24	35·21	1·382	+0·074	5	154	58	13·10	16·20	—0·15	4	49·87
795	6·9		28	4·59	5·405	—0·004	5	19	1	30·75	16·01	—0·03	5	49·85
802	7·2		29	33·61	5·023	—0·121	4	22	35	3·77	15·93	+0·03	4	49·90
814	5·9		31	59·33	5·027	0·000	4	22	49	3·26	15·80	+0·03	4	49·95
834	6·8		35	9·63	3·461	—	4	65	0	10·15	15·63	—	4	49·92
841	7·5		36	18·80	1·269	+0·018	4	154	55	39·42	15·57	0·00	3	50·02
857	6·7		38	12·85	4·352	—	5	33	35	48·98	15·46	—	4	50·01
858	6·3		38	28·82	4·356	—	5	33	32	44·11	15·45	—	4	50·01
868	7·7		40	13·49	1·341	0·000	4	153	33	9·30	15·35	+0·41	4	49·91
875	6·2		42	15·18	4·199	—	4	37	37	23·99	15·24	—	4	49·90
876	6·3		42	15·83	1·260	+0·025	4	154	20	6·02	15·24	—0·06	4	49·97

No. of B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No of Observations.	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Observations.	Mean Date of Observation.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800 +
895	5·9	2	45	42·82	+1·302	—	4	153	25	46·21	—15·04	—	4	49·81
897	6·5		46	26·64	4·008	—	4	43	26	51·98	14·99	—	5	49·87
906	6·7		48	31·44	1·219	+0·051	4	154	9	19·40	14·88	—0·08	4	49·97
911	7·4		49	6·33	1·265	+0·007	4	153	31	26·60	14·84	—0·15	3	50·25
914	6·0		49	40·36	4·025	—	4	43	23	2·11	14·81	—	4	49·93
916	6·1		49	59·17	3·840	—	4	49	34	6·50	14·79	—	4	50·00
925	7·0		51	15·13	1·075	—	4	155	30	44·20	14·71	—	4	50·48
936	6·8		52	20·08	3·637	—	3	58	11	6·04	14·65	—	3	49·98
956	5·6		55	58·88	1·109	0·000	4	154	40	5·66	14·43	—0·06	4	49·87
961	6·0		57	48·54	2·047	+0·044	4	137	33	52·49	14·32	0·00	4	49·86
983	6·3	3	2	16·14	3·924	—	4	48	11	42·06	14·04	—	4	49·52
988	6·8		3	9·70	5·205	—	4	24	11	1·25	13·99	—	4	49·94
995	6·7		5	29·96	4·240	—0·013	4	39	37	24·26	13·84	—0·03	4	49·79
998	6·8		5	46·48	5·618	+0·012	4	20	49	27·88	13·82	—0·02	3	49·95
1008	6·6		8	3·27	3·855	—	4	51	16	19·83	13·67	—	4	49·81
1018	7·2		9	50·67	6·227	+0·023	4	17	19	57·69	13·56	+0·01	4	49·90
1036	7·1		12	48·97	0·933	+0·010	4	154	59	41·07	13·37	—0·01	3	49·90
1048	6·1		14	31·52	1·089	+0·194	4	153	9	1·30	13·26	—0·78	4	49·95
1050	6·6		14	52·26	6·045	+0·010	3	18	39	56·34	13·23	—0·06	4	49·95
1055	7·1		15	51·76	3·468	—	5	68	29	41·38	13·17	—	5	49·88
1067	6·8		18	53·01	6·372	+0·010	4	17	10	9·48	12·97	—0·02	4	49·92
1072	5·6		20	2·53	4·192	—0·006	3	42	25	1·39	12·89	—0·01	3	49·97
1080	6·9		21	28·90	6·977	—	5	14	46	4·50	12·79	—	5	50·03
1101	7·1		26	18·41	3·704	—	4	58	49	31·51	12·46	—	4	49·79
1105	6·5		27	52·42	4·022	—	4	47	54	57·47	12·36	—	3	49·85
1131	7·8		32	44·66	0·637	+0·037	3	156	15	45·00	12·02	—0·15	4	49·71
1142	6·6		35	30·61	4·158	—	4	44	47	38·78	11·82	—	4	49·90
1172	6·1		39	38·57	4 146	—	4	45	29	42·92	11·53	—	4	49·92
1182	7·0		40	25·76	3·557	—	3	66	4	54·14	11·47	—	1	49·94
1205	7·4		44	31·87	3·040	—	4	91	36	6·95	11·18	—	4	49·72
1248	7·0		54	8·43	0 742	—	4	153	53	55·06	10·47	—	4	49·86
1261	6·9		56	47·19	5 020	—	4	30	29	58·03	10·27	—	4	49·92
1282	6·9	4	2	36·72	4·397	—	4	41	17	50·14	9·83	—	4	49·91
1292	6·6		4	44·85	4·908	—	4	32	31	13·35	9·67	—	5	49·95
1297	8·2		5	45·04	0·592	+0·037	4	154	37	58·03	9·59	+0·10	4	49·73
1305	6·3		7	45·69	4·124	—	5	48	14	0·29	9·43	—	5	49·97
1307	5·6		7	58·55	4·461	—	4	40	19	23·86	9·42	—	4	49·89
1314	6·7		8	50·49	4·508	—	4	39	26	59·53	9·35	—	4	50·04
1318	6·4		9	40·83	4·837	—	4	33	51	39·14	9·29	—	5	49·96
1334	7·1		12	13·23	2·557	—	4	113	20	24·23	9·09	—	4	49·72
1351	5·9		14	52·32	3·421	—	4	73	43	33·78	8·88	—	2	49·85
1361	6·7		16	12·79	3·477	—	4	71	18	26·93	8·77	—	5	49·91
1412	7·3		26	2·36	0·679	+0·021	4	152	51	2·98	8·00	—	4	49·72
1415	7·3		26	35·75	4·913	—	4	33	40	18·68	7·95	—	4	49·96
1427	6·6		28	33·19	2·986	—	4	93	55	23·63	7·79	—	4	49·93
1457	6·8		35	43·06	6·142	+0·013	4	22	6	18·59	7·21	+0·03	4	49·92
1463	7·3		36	39·29	3·610	0·000	4	66	39	9·14	7·13	—	4	49·81
1466	8·1		37	10·10	0·651	+0·036	4	152	40	18·76	7·09	—0·08	4	49·74
1489	5·9		42	6·17	0·887	+0·046	4	150	0	31·19	6·69	—0·16	4	49·72
1515	7·5		47	7·42	3·645	—	4	65	39	7·48	6·27	—	4	49·72

No. from B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Observations.	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Observations.	Mean Date of Observation.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800+
1522	6·8	4	47	40·20	+6·008	—	4	23	23	47·51	—6·23	—	4	49·89
1566	9·6		58	2·22	4·725	—	4	37	54	13·27	5·36	—	4	49·89
1567	7·7		58	2·83	4·812	—	4	36	29	31·90	5·36	—	4	49·92
1585	6·4		59	45·72	7·316	—	4	16	54	55·44	5·21	—	4	49·97
1589	5·8	5	1	5·31	1·541	+0·068	5	139	46	58.68	5·10	—0·07	4	49·73
1592	6·8		1	9·35	2·869	—	4	98	51	49·11	5·09	—	4	49·85
1612	9·5		5	37·43	0·626	—0·022	4	151	59	56·90	4·72	+0·16	5	50·06
1621	6·7		6	24·34	0·452	—0·031	4	153	35	20·46	4·64	+0·15	4	49·79
1656	6·9		13	33·65	3·261	—	4	81	43	28·36	4·04	—	3	49·75
1678	6·7		16	13·78	3·047	—	4	91	0	41·62	3·81	—	3	49·87
1696	7·1		18	40·36	3·135	—	3	87	11	57·53	3·60	—	3	49·95
1704	6·7		19	36·91	1·098	+0·020	5	146	16	35·19	3·52	—0·23	5	49·82
1706	6·1		19	42·04	7·961	+0·026	4	15	4	1·85	3·50	—	4	50·08
1712	7·0		21	22·63	1·356	—0·018	4	142	26	57·35	3·36	—	4	49·85
1728	7·1 7·0		23	32·45 32·85	3·473	— 0·000	4 2	73	3	28·01 34·73	3·18	—	4 4	49·89
1729	5·5		24	8·24	0·869	—0·012	4	149	2	23·24	3·12	—0·07	4	49·99
1736	7·0		24	56·53	4·518	0·000	4	42	23	25·68	3·06	—	4	50·10
1751	6·6		27	25·20	5·989	—	4	24	23	32·93	2·84	—	4	50·09
1752	6·3 6·2		27	41·44 43·04	2·929	—	4 4	96 96	6 6	47·41 21·50	2·82	—	3 3	49·98
1756	5·9		27	48·62	2·013	—	4	128	37	14·77	2·81	—	4	50·04
1761	7·3		28	5·65	2·308	0·000	5	119	57	17·06	2·78	—	5	49·89
1770	6·9		29	22·30	0·350	+0·042	4	154	2	22·66	2·67	—0·13	4	49·87
1772	6·5		29	46·06	3·809	0·000	4	60	52	38·09	2·64	—	4	49·92
1790	6·4		32	11·12	0·310	+0·104	4	154	19	36·18	2·43	+0·06	4	49·91
1808	7·9		35	56·71	3·427	—	4	75	0	27·23	2·10	—	4	49·77
1813	6·6		36	47·79	6·433	—	4	21	34	56·12	2·03	—	4	49·98
1822	7·4		38	11·64	2·520	—	5	112	28	29·71	1·91	—	5	49·88
1826	6·8		38	38·08	3·293	—	4	80	32	15·21	1·87	—	4	49·88
1832	6·6		39	1·02	4·742	—	4	38	32	18·17	1·83	—	4	50·02
1847	7·8		41	28·09	2·092	+0·010	4	126	17	17·59	1·62	—0·25	4	49·80
1866	7·4		44	18·81	4·764	—	4	38	13	52·85	1·37	—	4	49·85
1877	7·0		45	35·64	5·040	0·000	3	34	7	13·74	1·26	—	3	50·05
1888	7·0		47	25·42	4·944	—	4	35	28	29·18	1·10	—	4	49·89
1893	7·1		48	13·51	3·294	—	5	80	31	5·05	1·03	—	5	49·75
1899	6·6		49	20·67	4·387	—	4	45	25	30·54	0·93	—	4	49·98
1907	6·8		50	26·81	3·374	—	4	77	12	39·09	0·83	—	4	50·02
1909	7·6		50	34·60	0·324	—0·037	4	154	3	59·06	0·82	—	4	49·95
1921	6·6		52	2·78	4·333	+0·006	5	46	37	46·44	0·70	+0·03	5	49·98
1926	6·2		52	57·63	0·432	+0·027	4	153	8	9·35	0·62	—0·74	4	49·92
1927	7·4		53	31·42	0·268	—0·050	4	154	30	25·49	0·56	—0·18	4	49·90
1932	7·6		54	18·62	4·137	—	4	51	25	36·68	0·50	—	4	49·89
1942	6·1		56	14·38	4·134	—0·004	4	51	30	37·65	0·33	+0·09	4	49·86
1950	6·4		57	39·12	5·431	—	4	29	31	46·64	0·21	—	4	50·02
1954	8·1		58	17·12	0·922	+0·018	4	148	6	17·09	0·15	—0·25	3	49·78
1994	6·0	6	4	33·99	2·918	—	4	96	31	13·07	+0·40	—	3	49·91
1999	7·9		5	32·51	4·048	—	4	53	48	46·94	0·49	—	4	49·90
2000	5·9		5	41·63	0·543	—	4	152	7	41·27	0·50	—	4	49·90
2013	7·0		7	22·74	1·167	—	4	144	56	10·81	0·65	—	4	50·03
2014	7·2		7	30·75	4·013	—	5	54	48	25·14	0·66	—	6	49·88
2021	6·8		8	51·19	4·015	—	4	54	44	24·75	0·77	—	3	49·93

No. from B. A. C.	Magnitude.	Right Ascension, January 1, 1850. h.	m.	s.	Annual Precession. s.	Proper Motion. s.	No. of Obser-vations.	North Polar Distance, January 1, 1850. °	′	″	Annual Precession. ″	Proper Motion. ″	No of Obser-vations	Mean Date of Observa-tion. 1800 +
2031	5·8	6	10	55·63	+0·133	—0·048	4	55	33	12·14	+0·96	—0·30	4	49·95
2046	5·9		13	45·39	5·076	+0·017	4	33	38	32·75	1·20	—	4	50·06
2048	7·8		14	9·43	0·836	—	4	149	9	19·77	1·24	—	3	53·05
2049	6·7		14	14·08	0·887	—	4	149	8	41·91	1·25	—	4	52·25
2070	7·6		17	16·04	3·337	—	5	78	43	24·59	1·51	—	5	50·13
2072	7·3		17	34·85	2·274	+0·014	4	120	52	15·79	1·54	+0·20	3	50·06
2076	8·3		18	30·52	3·989	—	4	55	25	19·36	1·62	—	4	49·96
2078	7·2		18	43·09	0·368	+0·044	5	153	45	18·62	1·64	—0·27	5	50·04
2083	6·9		18	57·01	7·657	—	4	16	11	59·36	1·66	—	4	50·16
2093	6·1		20	15·51	1·074	+0·010	4	146	17	24·72	1·77	0·00	4	49·94
2101	7·4		21	18·16	3·626	—	4	67	21	38·18	1·86	—	4	50·12
2102	6·7		21	30·09	1·317	—	4	142	43	20·31	1·87	—	4	50·14
2106	5·9		21	45·68	1·588	—0·058	4	138	5	20·37	1·90	—0·17	4	50·09
2113	7·1		23	11·54	5·218	+0·013	4	31	46	36·66	2·03	+0·05	4	50·14
2118	7·1		23	57.10	3.188	—	3	84	57	19·21	2·09	—	4	50·05
2121	6·9		23	59·93	0·376	—0·119?	4	153	44	20·65	2·10	—0·12	4	50·02
2137	6·4		26	8·28	1·480	+0·035	4	140	8	5·35	2·28	—0·13	4	49·80
2139	5·5		26	13·74	4·129	—	4	51	26	23·38	2·29	—	4	50·07
2142	6·2		26	23·76	0·567	—0·070	4	152	3	7·54	2·31	+0·03	4	50·05
2184	7·5		32	42·62	3·463	—	6	73	28	3·03	2·85	—	6	49·83
2190	8·1		33	33·13	2·043	+0·022	4	127	51	48·81	2·93	+2·64	4	49·79
2238	6·4		42	53·37	3·649	—	4	66	13	33·90	3·73	—	5	49·81
2247	6·2		44	15·90	6·881	—	4	19	0	2·99	3 85	—	4	49·85
2284	6·8		51	43·43	2·469	+0·080	4	114	46	29·30	4·48	—	3	49·80
2288	7·0		51	56·09	2·148	0·000	5	125	18	36·99	4·51	—0·27	3	49·84
2292	7·4		52	40·88	3·320	—	4	79	10	7·94	4·57	—	5	49·85
2315	7·3		56	24·76	2·151	0·000	5	125	20	4·20	4·89	—0·04	5	49·84
2320	8·0		57	5·53	80·198	—0·260	4	0	57	45·06	4·94	—	3	50·13
2321	6·0		57	13·10	1·460	—0·015	4	141	11	22·90	4.96	—0·23	4	49·82
2334	6·8	7	0	27·92	4·610	—	4	39	58	16·83	5·23	—	4	49·85
2341	6·1		1	40·48	4·701	0·000	4	38	19	45·94	5·33	—	4	49·93
2360	8·1		4	31·02	1·782	+0·042	4	135	5	28·62	5.57	—0·06	4	49·81
2361	6·0		4	40·87	4·472	0·000	4	42	29	59·82	5·59	—	3	49·85
2363	7·2		5	16·89	3·668	—	4	65	2	15·76	5·63	—	4	49·97
2367	6·3		5	46·01	4·735	0·000	4	37	36	40·71	5·68	—	4	50·07
2375	6·1		6	45·84	1·613	0·000	4	138	41	34·64	5·76	—	4	49·93
2379	5·7		7	7·12	4·581	—	4	40	16	27·80	5·79	—	4	50·02
2386	7·0		8	7·87	2·330	—0·009	4	120	5	5·57	5·87	+0·06	4	49·98
2399	6·2		9	33·09	2·321	—0·027	4	120	25	36·59	5·99	—0·07	4	49·89
2404	6·1		10	30·16	1·655	0·000	4	138	0	41·42	6·07	—	4	49·97
2408	6·4		10	36·87	0·578	—0·011	4	152	56	1 51	6·08	—	4	50·07
2419	6·6		12	32·14	6·010	0·000	4	23	22	54·70	6·24	—	4	50·07
2463	7·4		19	20·40	3·735	—	5	62	8	55·89	6·81	—	5	49·82
2488	6·8		25	37·15	4·382	—	5	43	29	42·35	7·32	—	5	49·82
2511	6.4 7·8 7·7		29	10·33 42·38 45·21	2·759	—	3 4 2	104	9	50·51 10·54 14·14	7·61 7·65 7·65	—	3 2 2	49·84 49·92 50·08
2512	7·0		29	45·84	4.842	—	5	34	53	42·36	7·66	—	5	50·05
2518	8·6		30	30·19	3·188	—	4	84	35	25·51	7·72	—	4	50·16
2528	7·1		32	27·13	2·121	—0·025	5	127	40	31·90	7·88	—0·09	5	49·87
2538	5·8		33	31·92	2·744	—	3	104	55	11·63	7·96	—	5	49·89
2565	6·9		38	16·16	2·521	+0·014	4	114	18	58·99	8·34	—	4	49·83

No. from B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Observations.	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Observations.	Mean Date of Observation.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800 +
2586	7·6	7	40	38·83	+3·730	—	4	61	25	50·08	+8·53	—	4	49·87
2587	7·1		40	46·04	2·578	—	5	112	9	13·51	8·54	—	4	49·82
2610	7·1		43	46·23	0·407	—0·116 ?	4	155	42	20·60	8·78	—0·28	3	49·91
2615	8·9		44	9·65	1·106	—	5	148	32	6·53	8·81	—	4	49·90
2638	6·9		47	43·27	4·237	0·000	4	45	37	39·29	9.08	—	4	49·95
2650	6·9		50	20·69	4·944	0·000	4	32	19	2·80	9·29	—	4	49·95
2656	6·5		51	46·98	1·258	+0·015	4	146	54	24·69	9·40	—0·23	4	49·83
2666	5·8		53	9·07	2·688	+0·010	5	107	59	27·09	9·50	—	5	49·91
2674	6·8		54	42·42	6·319	+0·033	4	19	51	16·12	9·62	—0·07	4	50·09
2683	7·0		56	4·66	3·479	0·000	4	70	44	15·73	9·73	—	4	50·04
2687	6·7		56	20·27	1·013	+0·012	4	150	24	50·78	9·75	—0·28	4	49·83
2688	6·7		56	24·78	3·691	—	4	62	2	55·06	9·76	—	5	50·13
2704	6·8		57	42·81	4·985	—0·008	4	31	19	7·90	9·85	+0·09	4	50·18
2706	6·9		57	46·34	2·709	0·000	5	107	14	39·07	9·86	—	4	50·03
2709	7·1		58	1·78	1·407	—0·049	4	145	2	16·54	9·88	+0·11	4	49·90
2713	5·4		58	25·94	0·774	—0·019	4	153	9	9·11	9·91	—	4	50·10
2715	6·6		59	3·98	4·148	0·000	4	47	8	8·33	9·96	+0·12	4	50·17
2723	6·2	8	0	41·15	2·647	0·000	4	110	7	25·35	10·08	—	4	50·04
2737	7·0		2	32·86	3·380	0·000	4	74	55	51·04	10·22	—	4	49·93
2738	7·4		2	34·81	0·870	+0·039	4	152	24	23·11	10·22	—0·17	4	49·83
2739	6·6		2	36·88	2·745	0·000	4	105	48	43·14	10·23	—	4	50·10
2748	7·2		3	58·28	3·366	0·000	4	75	33	8·06	10·33	—	4	50·08
2749	6·4		4	2·27	6·787	+0·011	5	17	8	9·03	10·33	+0·05	6	50·36
2751	6·9		4	31·44	5·025	0·000	4	30	21	33·12	10·37	—	5	50·17
2761	6·8		6	0·27	3·344	—	4	76	30	5·39	10·48	—	4	50·08
2768	6·8		6	26·74	0·802	—0·018	4	153	21	33·21	10·51	—0·06	4	49·89
2796	5·9		12	59·56	0·927	0·000	5	152	27	9·51	11·00	—0·11	6	49·84
2798	6·8		14	32·06	4·090	0·000	4	47	31	1·54	11·11	—	4	50·06
2801	7·3		15	18·52	3·635	—	5	63	3	17·94	11·17	—	4	50·13
2820	6·6		17	44·47	2·215	—0·037	4	127	48	17·51	11·34	—0·14	4	50·10
2823	5·6		17	55·23	1·846	0·000	4	138	0	36·78	11·35	—0·19	4	49·84
2843	6·6		21	15·06	2·410	+0·039	4	121	10	49·49	11·59	—0·19	4	49·97
2852	6·6		22	53·93	6·893	+0·008	4	15	51	13·66	11·71	+0·09	4	50·12
2855	6·6		23	8·66	3·934	—0·018	4	51	28	25·58	11·73	+0·19	4	50·09
2857	6·1		23	30·11	1·655	+0·009	4	142	35	34·86	11·76	—0·15	4	49·84
2882	6·6		26	54·84	4·961	0·000	4	29	32	30·77	11·99	—	5	50·15
2887	6·1		27	7·96	4·540	—0·016	4	36	4	53·87	12·01	+0·05	3	50·13
2894	6·7		28	15·13	3·658	0·000	4	61	11	12·37	12·09	—	4	49·93
2898	6·7		29	7·63	2·544	+0·033	5	116	19	43·24	12·15	—0·04	5	49·89
2939	6·0		34	38·89	1·080	+0·035	4	152	19	35·27	12·53	+0·05	4	49·98
2949	7·1		35	46·19	1·089	—0·016	4	152	18	51·14	12·61	—	4	49·98
2988	7·0		41	51·42	4·551	—	5	34	29	28·27	13·02	—	6	50·15
3004	7·6		43	44·73	5·349	0·000	4	23	54	33·18	13·14	—	4	50·17
(3008)	7·5		43	57·50	1·121	—0·096	5	152	38	18·13	13·16	+0·24	6	50·07
3007	6·4		44	1·73	2·533	+0·040	4	118	3	37·88	13·16	+0·18	5	50·07
3013	7·1		44	28·76	3·175	0·000	4	84	5	55·31	13·19	—	4	50·17
3021	7·6		45	32·53	5·386	—	4	23	25	37·95	13·26	—	4	50·21
3027	6·1		46	45·10	3·932	—0·010	4	49	13	40·39	13·34	+0·07	4	50·21
3028	7·1		46	49·86	1·143	+0·016	4	152	37	20·58	13·34	—0·09	4	50·12
3053	6·7		49	36·35	3·244	0·000	4	80	2	15·68	13·52	—	3	50·08

No. from B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Observations.	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Observations.	Mean Date of Observation.
		h.	m.	s.	s	s.		°	′	″	″	″		1800+
3060	6·6	8	50	57·52	+3·843	0·000	4	51	48	58·34	+13·61	—	4	50·12
3067	9·6		51	59·93	1·763	—0·049	2	143	13	22·30	13·68	+0·60	2	50·17
	9·4		52	1·02			4			29·07			4	
3072	6·5		52	58·85	4·455	—	4	35	7	45·57	13·74	—	4	50·30
3082	6·9		54	41·33	2·597	0·000	4	116	4	33·37	13·85	0·00	4	50·07
3083	6·9		54	43·44	4·283	—0·010	4	38	34	57·93	13·85	—	5	50·17
(3086)	6·8		55	0·99	4·740	—	4	30	3	41·42	13·87	—	4	50·22
3085	6·4		55	1·24	4·186	—	4	40	52	39·22	13·87	—	4	50·20
3091	7·5		55	53·81	4·226	—	4	39	47	41·98	13·93	—	4	50·25
3093	7·4		56	4·92	3·523	0·000	4	64	48	6·09	13·94	—	4	50·15
3100	6·9		57	15·04	3·842	+0·019	4	51	7	31·14	14.01	+0·07	4	50·11
3103	7·4		57	50·50	3·375	—	4	72	17	22·76	14·05	—	4	50·13
3116	6·5	9	0	40·61	6·265	—0·013	4	16	26	28·91	14·22	—	4	50·18
3118	6·9		0	46·25	4·864	—	8	27	43	1·82	14·23	—	4	*53·14
	7·4			47·91			4	27	42	36·87	14·23	—	4	50·16
3128	7·5		3	14·14	1·168	+0·023	3	153	53	52·36	14·38	—0·09	4	50·17
3133	6·4		4	22·55	3·143	0·000	4	85	31	15·39	14·45	—	4	50·08
3139	7·2		5	11·74	1·903	—0·003	4	141	39	6·38	14·50	+1·36	2	50·13
3154	7·9		8	29·61	1·924	+0·071	3	141	33	49·69	14·70	—0·32	5	50·15
3172	6·3		10	39·93	4·475	0·000	4	32	40	9·98	14·83	—	5	50·14
3180	8·6		12	7·67	2·675	—	4	113	49	39·31	14·91	—	4	50·18
3189	7·6		13	39·43	1·317	+0·400?	4	153	8	50·50	14·99	+0·28	3	50·10
3220	6·8		19	1·87	4·370	—0·015	4	33	36	10·74	15·31	—	4	50·18
3226	6·2		20	20·96	2·989	—	7	95	25	7·91	15·38	—	7	50·12
3274	7·5		28	1·96	1·612	—0·030	4	150	34	19·78	15·80	—	4	50·06
3276	5·9		28	21·91	2·147	+0·009	4	138	20	24·74	15·82	—0·18	4	50·13
3287	6·2		29	18·60	5·305	—0·015	4	20	5	5·16	15·87	—	4	50·18
3301	9·9		31	29·98	1·392	—	4	154	19	51·30	15·99	—	5	50·19
3308	6·5		32	42·05	4·217	—	4	34	57	19·55	16·05	—	4	50·18
3316	7·4		34	42·98	1·466	+0·010	4	153	43	30·95	16·16	—0·04	4	50·02
3323	6·8		35	50·06	1·574	+0·015	4	152	15	49·57	16·22	—0·12	5	50·21
3325	7·1		36	3·01	4·677	—	4	26	3	30·69	16·23	—	4	50·19
3336	6·1		38	14·92	3·171	—	4	82	36	5·92	16·34	—	3	50·14
3351	6·6		40	52·78	1·919	+0·031	4	146	29	41·56	16·47	0·00	4	50·12
3357	9·4		41	53·23	1·359	—	4	156	6	59·40	16·52	—	4	50·13
3373	9·9		44	27·52	1·383	—	4	156	9	53·28	16·65	—	4	50·20
3375	6·7		44	39·42	3·605	—	4	54	18	46·25	16·66	—	4	50·16
3380	6·1		45	50·02	3·157	—	4	83	20	15·00	16·72	—	4	50·10
3397	6·8		48	27·39	3·826	—	4	43	52	25·54	16·84	—	4	50·16
3402	5·8		49	29·52	4·203	—	4	32	28	24·27	16·89	—	4	50·18
3418	8·1		53	3·76	3·191	—	4	80	19	45·67	17·06	—	4	50·06
3420	7·1		53	21·09	3·513	—	5	57	44	52·09	17·07	—	6	50·17
3421	7·1		53	29·81	3·931	—	4	39	10	11·70	17·08	—	4	50·20
3426	6·8		54	45·99	1·729	+0·010	5	152	37	30·84	17·14	—0·02	4	50·22
3427	7·7		55	13·13	3·527	—	4	56	37	50·72	17·15	—	4	50·21
3430	7·8		55	21·07	3·180	—	4	81	2	53·38	17·16	—	4	50·26
3431	7·6		55	30·60	3·522	—	5	56	49	23·58	17·17	—	4	50·29
3438	7·7		56	57·46	3·139	—	4	84	16	14·54	17·23	—	4	50·28
3439	7·7		56	57·68	3·563	—	4	54	16	13·85	17·23	—	4	50·32
3460	7·0	10	0	53·80	3·303	—	4	70	44	3·02	17·41	—	4	50·19
3467	8·2		2	15·51	1·910	—	4	150	28	55·62	17·47	—	4	50·31
3468	6·1		2	18·37	3·586	—	4	51	51	40·23	17·47	—	4	50·26

* This is the mean epoch for the P. D., that for the A. R. is 1851 65.

No. from B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No of Obser-vations.	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion	No. of Obser-vations.	Mean Date of Observa-tion.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800+
3471	6·3	10	2	47·59	+2·931	—	4	102	4	34·96	+17·49	—	4	50·31
3479	9·5		4	27·25	1·700	—	4	154	46	31·89	17·56	—	4	50·19
3481	6·3		4	32·40	1·681	—0·017	5	155	4	53·53	17·56	—0·18	5	50·21
3484	7·8		5	32·66	3·473	—	4	57	49	57·42	17·61	—	4	50·17
3488	7·1		6	27·32	2·050	+0·046	4	148	5	22·13	17·64	—0·11	4	50·08
3513	6·5		9	16·53	1·700	—0·009	4	155	37	44·67	17·76	—0·18	4	50·18
3519	6·2		10	46·60	3·945	—0·008	4	35	2	0·02	17·82	+0·09	4	50·18
3529	7·7		12	41·01	3·147	—	4	82	48	58·21	17·90	—	4	50·13
3541	6·5		14	26·56	1·856	+0·028	5	153	55	27·31	17·97	—0·20	5	50·09
3543	7·0		15	5·71	1·838	—	4	154	23	1·12	17·99	—	4	50·18
3547	8·2		15	27·05	2·343	—0·012	4	140	59	11·79	18·00	+0·35	4	50·25
3553	6·9		15	57·05	3·041	—	4	92	53	9·29	18·02	—	3	50·20
3556	7·6		16	39·62	1·852	—	4	154	26	23·14	18·05	—	4	50·21
3564	5·9		18	31·71	1·776	+0·017	4	156	8	35·58	18·12	—0·10	4	50·07
3567	6·7		18	46·75	3·742	+0·013	4	40	24	59·78	18·13	+0·89	4	50·18
3592	7·1		22	0·46	3·093	0·000	4	87	44	14·10	18·25	—	4	50·21
3595	6·6		22	25·75	2·238	—	4	146	25	59·01	18·26	—	4	50·21
3599	6·6		22	42·33	1·893	+0·007	4	154	56	24·67	18·27	—0·13	4	50·18
3605	7·6		24	10·48	1·937	+0·030	4	154	24	38·10	18·33	—0·15	4	50·06
3607	5·9		24	27·51	3·544	—	4	48	48	14·89	18·34	—	4	50·19
3627	6·4		27	49·89	2·855	—	4	112	24	13·76	18·45	—	4	50·12
(3639)	5·6		29	45·05	3·785	— ?	4	35	33	1·79	18·54	+0·07	4	50·21
3635	5·1		29	50·42	2·288	—0·011	4	146	46	54·42	18·52	—0·03	3	50·06
3637	6·1		30	9·23	2·956	—	4	102	36	20·17	18·53	—	4	50·18
3645	6·0		31	3·38	4·404	—	4	20	46	30·45	18·56	—	4	50·19
3656	7·3		33	9·88	2·045	—0·019	4	154	15	45·82	18·63	—0·04	4	50·20
3659	7·4		33	38·76	2·074	—?	4	153	43	2·50	18·65	—	4	50·12
3662	7·8		33	46·63	3·171	—	4	78	28	41·21	18·65	—	4	50·25
3668	6·2		35	0·53	2·063	+0·009	4	154	19	6·50	18·69	0·00	4	50·12
3674	6·9		35	41·32	2·869	—	4	112	45	52·88	18·71	—	4	50·19
3694	5·4		38	42·58	2·153	— ?	4	153	10	28·24	18·81	—	4	50·22
3706	6·4		41	2·77	2·166	+0·011	8	153	28	24·47	18·88	—0·07	7	50·17
3716	7·4		42	12·99	2·168	—0·055	4	153	45	20·13	18·91	—0·07	4	50·19
3717	7·1		42	24·31	2·181	—0·010	5	153	28	20·54	18·92	—0·21	4	50·21
3726	7·3		44	31·30	3·084	0·000	4	88	10	46·25	18·98	—	4	50·07
3732	6·0		46	5·63	3·061	—	4	91	19	58·20	19·02	—	4	50·14
3739	7·0		47	18·71	2·401	+0·011	4	148	5	45·12	19·06	—0·09	3	50·18
3758	5·9		51	36·20	3·482	—	4	43	40	16·32	19·17	—	4	50·07
3760	6·7		51	48·74	3·445	—0·018	4	46	16	49·34	19·17	+0·19	4	50·10
3780	7·5		55	53·32	3·125	0·000	4	81	36	37·04	19·28	—	4	50·19
3781	7·7		55	55·21	3·377	—0·011	4	50	19	29·17	19·28	—0·02	4	50·08
3800	6·7		59	26·00	2·648	+0·010	4	140	24	1·75	19·36	+0·10	4	50·06
3806	7·7	11	0	27·12	2·366	—0·046	4	154	1	45·62	19·38	—0·29	4	50·13
3821	6·8		2	31·96	3·939	—	4	20	54	55·14	19·43	—	4	50·22
3825	7·1		3	58·62	3·545	0·000	4	34	17	29·87	19·46	—	4	50·32
3836	6·9		6	11·15	3·087	0·000	4	86	54	48·86	19·51	—	4	50·17
3839	6·3		6	34·04	2·455	+0·015	4	153	21	15·57	19·51	—0·07	5	50·26
3860	7·1		13	1·35	2·519	— 0·078	4	153	45	48·99	19·64	—0 07	4	50·24
3869	7·6		14	37·55	3·157	—0·010	4	71	44	25·77	19·66	—	4	49·99
3880	6·1		16	54·06	2·555	+0·008	4	154	7	55·27	19·70	—0·06	4	50·16

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		h.	m.	s.	s.	s.		°	′	″	″	″		1800 +
3895	5·8	11	19	15·13	+2·604	—0·046	4	153	8	41·79	+19·74	—0·05	4	50·05
3918	6·4		23	48 37	3·465	—0·046	4	28	5	15·41	19·81	—0·05	4	50·21
(3924)	5·7		24	51 30	2·736	+0·003	3	148	36	51·71	19·82	—0·05	1	50·02
3923	5·5		24	54·18	2·735	—0·011	3	148	41	15·72	19·82	—0·11	5	50·02
3931	5·9		26	47·07	3 353	0·000	4	34	23	10·86	19·85	—	4	50·25
3942	7·1		28	57·93	3·425	+0·006	4	26	58	28·31	19·87	—0·02	5	50·22
3944	8·0		29	7·31	2·750	—0·073	2	150	44	57·22	19·87	+0·14	2	50·29
3949	6·7		29	44·30	3·292	—0·009	4	38	33	2·07	19·88	+0·03	4	50·23
3959	6·4		32	12·72	3·338	—	4	31	11	57·16	19·91	—	4	50·25
3960	6 1		32	34·65	2·735	+0·029	4	154	33	58·16	19·91	+0·05	3	50·16
3985	6·3		38	51·79	3·256	0·000	4	33	32	15·21	19·97	—	4	50·27
3996	7·4		41	25·74	3·082	0·000	4	83	58	35·57	19·99	—	4	50·09
3997	6·9		41	29·68	3·104	0·000	4	72	55	16·61	19·99	—	4	50·31
4000	5·8		42	25·06	2·870	—	4	152	57	15·85	20·00	—0·09	4	50·27
4005	7·0		43	13·18	3·093	—	4	76	53	15·85	20·00	—	4	50·33
4010	6·8		44	18·73	3·144	+0·338	4	51	12	20·14	20·01	+5·78	4	50·29
4011	6·2		44	33·19	2·883	—0·038	4	154	22	16·89	20·01	+0·02	5	50·19
4018	7·4		46	1·96	3·143	—	4	48	15	1·09	20·02	—	4	50·04
4036	6·9		49	1·08	3·193	—0·009	4	27	36	50·79	20·03	+0·01	5	50·26
4041	6·4		51	15·79	2·968	— ?	5	153	30	14·78	20·04	—	5	50·04
4067	5·7		56	37·84	3·033	0·000	6	152	19	47·33	20·05	0·00	6	50·10
4073	7·2		57	41·40	3·045	+0·018	5	152	8	23·69	20·05	—0·05	3	50·16
4074	6·5		58	2 74	3·094	—0·012	4	26	13	41·90	20·05	+0·06	4	50·17
4075	7 2		58	9·01	3·048	—0·005	4	154	42	40·81	20·06	+0·09	4	50·17
4105	7 0	12	4	5·57	3·118	+0·034?	4	153	40	29·94	20·05	+0·06	4	50·11
4109	8·0		4	16·29	3·119	—	5	152	37	5·50	20·05	—	5	50·20
4122	6·4		7	56·73	2·936	0·000	4	18	57	51·85	20·04	—	4	50·26
4133	5·3		10	20·81	3·190	—0·022	4	153	10	6·28	20·04	—0·05	4	50·05
4146	7·2		12	16·81	3·224	+0·008	4	155	0	30·70	20·03	+0·05	4	50·15
4153	6·2		12	46·66	3·032	0·000	4	62	32	33·81	20·02	—	4	50·27
4199 .	6·9		20	7 62	3·012	—	4	63	15	25·17	19·98	—	4	50·12
4205	7·1		21	8·30	3 008	0·000	4	62	56	32·82	19·97	—	4	50·24
4219	6·8		23	1·14	2·842	0·000	4	30	24	6·00	19·95	—	4	50·29
4231	7·9		26	3·32	2·999	0·000	4	64	43	21·75	19·93	—	4	50·07
4244	6·1		27	50·64	2·947	—	4	52	44	50·23	19·91	—	4	50·03
4277	6·5		35	56·11	3·073	—	4	90	45	3·03	19·81	—	4	50·13
4282	7·1		37	21·36	2·854	—0·004	4	45	4	29·05	19·79	—0·04	3	50·26
4287	6 3		38	3·86	2·840	—0·003	4	43	44	19·52	19·78	—0·03	4	50·28
4300	6 6		40	53·15	2·593	0·000	4	26	23	57·70	19·74	+0·03	4	50·31
4305	6 6		42	6·22	2·628	0·000	4	28	51	41·04	19·72	—	4	50·31
4311	6·8		43	2·29	2·873	—	4	51	39	57·54	19·70	—	4	50·06
4324	6·0		45	47·28	3·501	+0·012	4	148	19	50·10	19·66	+0·02	4	50·19
4341	6·5		48	4·48	2·761	+0·005	4	41	59	21·42	19·62	+0·04	4	50·19
4345	6·4		48	58·73	2·840	—	4	50	52	28·31	19·60	—	3	50·25
4350	6·4		50	15 93	2 759	—0·006	4	43	0	32·35	19·58	+0·07	4	50·26
4356	6·6		52	27·76	3·593	—0·048?	4	149	51	39·60	19·53	—0·02	4	50·25
4364	7·5		54	14·36	2·944	+0 017	4	67	55	16·73	19·50	—	4	50·19
4370	7·9		55	34·95	3·718	+0·032	4	153	38	1·54	19·47	—0·01	4	50·27
4372	8·0		56	1·05	3·623	0·000	4	149	37	59·25	19·46	+0·02	4	50·27
4381	6·7		58	29·77	3·778	+0·007	4	154	30	7·73	19·41	+0·02	4	50·23

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		h.	m	s.	s.	s.		°	′	″	″	″		1800 +
4389	6·5	12	59	6·49	+2·717	—0·002	5	43	55	41·31	+19·39	—0·03	4	50·19
4394	6·0	13	0	43·79	3·121	0·000	4	98	10	45·63	19·36	—	4	50·16
4402	7·0		2	19·47	3·761	—	4	152	30	9·59	19·32	—	4	50·39
4404	7·0		2	28·22	3·606	—	2	146	6	32·58	19·31	+0·12	3	50·39
4407	6·5		2	43·22	2·786	0·000	4	51	46	35·17	19·31	—	3	50·33
4410	7·0		2	54·13	3·611	—	2	146	9	26·13	19·31	—	2	50·43
4445	8·1		9	53·94	3·127	—	4	97	56	18·91	19·13	—	4	50·06
4457	6·5		12	9·70	2·771	—	5	54	4	57·33	19·07	—	5	50·27
4462	7·0		12	59·39	3·029	—	4	84	23	1·37	19·05	—	4	50·30
4468	7·3		13	58·58	2·958	+0·014	4	75	3	43·42	19·02	+0·09	4	50·35
4469	5·8		13	59·49	3·931	0·000	3	153	44	53·40	19·02	—	3	50·37
4470	5·7		14	4·16	3·049	—0·011	4	87	7	21·45	19·02	—	4	50·40
4475	6·1		15	15·14	3·943	—0·038	4	153	41	55·05	18·98	—0·14	4	50·37
4479	6·0		17	5·26	2·728	—0·003	4	52	10	53·31	18·93	—0·01	5	50·54
4491	7·0		18	41·21	3·812	—	4	148	44	59·77	18·88	—	4	50·37
4503	7·7		21	38·17	3·033	—	4	85	21	1·32	18·80	—	4	50·18
4512	7·1		23	12·09	4·082	—0·119 ?	4	154	51	26·46	18·75	—0·05	4	50·25
4513	8·0 7·5		23	40·39 45·14	2·848	—	4 4	64	59	26·78 15·26	18·73	—	4 3	50·28 50·28
4519	6·7		24	44·68	2·622	—0·016	4	47	7	14·56	18·70	—0·50	4	50·30
4524	7·7		25	16·24	4·084	—0·002	4	154	22	48·46	18·68	+0·07	4	50·34
4545	6·9		28	50·34	2·566	—0·005	4	45	2	5·28	18·57	—0·05	4	50·31
4552	5·4		30	47·20	2·681	—	4	52	56	25·83	18·50	—	4	50·33
4557	6·7		32	7·11	3·908	0·000	4	148	1	29·79	18·46	+0·06	4	50·34
4558	6·2 7·3		32	10·72 10·79	3·786	—0·010	3 3	143	47	48·12 53·85	18·46	+0·06 —	3 2	50·32 50·39
4559	6·5		32	10·73	2·964	0·000	4	78	29	22·77	18·45	—	4	50·35
4573	7·2		36	10·62	4·102	— ?	5	152	9	16·15	18·31	+0·04	4	50·31
4575	7·0		36	39·83	2·833	0·000	4	66	32	28·67	18·30	—	4	50·24
4587	8·6		38	48·77	2·582	—	4	48	49	24·02	18·22	—	4	50·35
4588	7·6		38	59·37	4·040	—	4	150	0	4·64	18·21	—	4	50·69
4591	6·6		39	18·33	3·159	—	4	98	57	20·44	18·20	—	4	50·72
4595	6·7		39	48·65	2·610	—	5	50	44	38·57	18·18	—	4	50·83
4596	6·6		39	50·56	2·565	—0·031	3	48	9	25·73	18·18	+0·04	2	50·77
4600	6·8		40	31·10	2·606	—	4	50	42	19·68	18·16	—	5	50·72
4606	7·6		41	34·03	2·710	—0·013	4	57	50	58·77	18·12	—	5	51·14
4609	6·7		41	44·44	2·539	0·000	4	47	12	4·16	18·11	+0·03	4	50·54
4610	6·2		41	52·13	2·712	—	4	58	3	45·01	18·11	—	4	50·97
4611	6·8		41	54·96	4·181	— ?	4	152	36	35·75	18·11	—	4	51·11
4612	8·4		41	55·96	4·183	—	4	152	38	58·75	18·10	—	4	51·11
4621	7·0		42	56·54	2·866	—	4	70	37	23·36	18·07	—	4	50·35
4626	7·5		44	16·51	4·113	—	6	150	35	30·37	18·02	—	6	50·65
4627	6·8		44	26·83	2·651	—	6	54	28	57·29	18·01	—	4	50·60
4628	6·7		44	31·57	2·652	—	3	54	35	21·03	18·01	—	4	50·64
4632	6·2		45	10·09	2·653	—	4	54	48	39·85	17·98	—	4	50·53
4639	6·6		46	12·90	3·247	—	4	106	26	21·32	17·94	—	4	50·28
4644	7·5		46	51·31	4·248	—0·014	4	152	56	51·50	17·91	+0·07	4	50·32
4652	6·8		49	30·86	2·676	—	4	57	13	59·57	17·83	—	4	50·33
4676	7·1		54	42·82	2·665	—	5	57	42	29·29	17·59	—	4	50·16
4678	6·9		55	53·82	2·660	—	5	57	36	54·26	17·54	—	4	50·21
4682	7·1		57	4·23	3·253	—	4	105	36	51·96	17·50	—	4	50·35
4694	7·7		59	46·83	2·661	—	4	58	25	48·98	17·38	—	4	50·28

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		h.	m.	s.	s.	s.		°	′	″	″	″		1800 +
4703	7·0	14	3	5·92	+4·538	—0·011	4	154	59	36·21	+17·23	—0·35	4	50·12
4723	7·2		7	14·18	2·667	—0·031	4	60	11	27·75	17·04	0·00	4	50·39
4728	6·4		8	20·07	2·426	—0·006	4	47	46	29·82	16·99	+0·11	4	50·40
4732	6·4		9	16·79	1·091	—0·014	4	19	51	46·94	16·95	+0·12	4	51·13
4736	7·0		10	0·47	2·109	—0·015	4	36	45	55·37	16·91	—	4	51·11
(4738)	6·5		10	17·63	2·457	—0·013	4	49	33	27·66	16·90	—	4	50·44
4737	6·4		10	17·90	2·865	—	4	74	2	23·92	16·90	—	4	50·41
4739	6·4		10	21·18	3·305	+0·031	4	108	1	6·34	16·90	+0·04	4	50·48
4740	5·6		10	31·20	3·409	—0·022	4	115	8	4·86	16·89	—0·25	5	50·77
4756	7·3		13	15·46	2·106	—	4	37	16	26·09	16·76	—	4	50·33
4758	7·1		13	37·78	2·464	—0·006	4	50	30	53·57	16·74	0·00	4	50·15
4776	7·0		17	9·26	3·441	—	4	116	10	6·36	16·57	—	4	50·28
4778	7·4		17	15·83	2·484	—	4	52	6	44·00	16·56	—	4	50·29
4783	7·1		19	21·50	2·450	—	4	50	55	38·85	16·46	—	4	50·15
4797	6·8		22	3·37	2·488	—	4	53	7	48·39	16·32	—	4	50·23
4805	6·9		23	41·58	2·352	+0·003	4	47	31	30·76	16·24	+0·21	4	50·19
4809	6·7		25	41·71	2·660	+0·012	4	62	39	24·19	16·14	—	4	50·30
(4817)	6·7		27	12·14	1·439	—0·030	4	26	8	58·93	16·06	—0·01	4	50·46
4816	6·6		27	12·15	2·453	—	4	52	22	33·34	16·06	—	4	50·23
4820	6·8		27	48·62	2·545	—	4	56	48	19·45	16·03	—	4	50·36
4827	6·8		28	36·64	2·191	—0·013	4	42	33	15·48	15·98	0·00	4	50·33
4830	6·1		29	24·55	2·103	—	4	39	58	33·07	15·94	—	4	50·34
4834	6·7		30	26·33	1·234	+0·002	4	23	56	54·67	15·89	—0·03	4	50·50
4840	7·4		32	15·01	3·428	0·000	4	113	24	33·70	15·79	—	4	50·34
4841	6·4		32	33·85	2·265	—0·015	4	45	42	32·34	15·77	—	4	50·27
4844	6·4		33	27·78	4·647	—0·023	4	152	13	49·89	15·73	0·00	4	50·30
(4857)	6·9		35	40·57	3·436	0·000	4	113	29	22·93	15·60	—	4	50·47
4856	7·8		35	40·71	4·344	—	4	146	35	52·06	15·60	—	4	50·44
(4863)	8·0		36	35·22	2·425	—	4	52	36	8·20	15·55	—	4	50·58
4860	6·4		36	45·80	4·135	+0·017	5	141	34	10·96	15·54	—	4	50·36
4870	6·5		37	54·87	2·329	0·000	4	48	54	14·39	15·48	—0·03	4	50·69
4874	7·1		38	18·29	1·475	—	4	28	5	53·67	15·46	—	4	51·13
4884	7·5		39	47·62	3·468	—	4	114	51	48·49	15·37	—	4	50·92
4887	6·9		40	14·12	4·202	—0·033	4	142	44	23·38	15·35	—0·22	4	50·43
4888	6·3		40	39·35	3·448	0·000	4	113	37	52·45	15·33	—	1	50·65
4897	6·6		43	12·93	2·377	—0·022	4	51	34	6·72	15·18	—	4	50·27
4899	7·6		43	16·72	4·664	—0·030	4	151	15	14·27	15·18	—0·05	4	50·40
4906	6·1		44	34·09	2·386	—	4	52	6	36·58	15·10	—	4	50·41
4908	6·2		44	42·21	4·738	—0·048?	4	152	9	57·62	15·10	—0·06	4	50·72
4910	7·3		45	13·87	3·452	—	4	113	21	28·16	15·06	—	4	50·46
4912	6·4		45	29·12	3·638	0·000	4	122	41	3·60	15·05	—?	4	50·60
4917	6·9		46	45·52	2·114	—	4	42	54	15·79	14·98	—	4	50·35
4920	7·3		48	10·15	3·501	—0·011	4	115	40	25·97	14·89	—	4	50·34
4921	7·1		48	33·75	4·907	—0·025	4	153	58	7·65	14·87	—	4	50·13
4934	7·3		50	20·14	2·263	—	4	48	15	24·86	14·77	—	4	50·35
4938	6·1		52	19·44	4 897	—0·015	4	153	26	12·84	14·65	—0·04	4	50·33
4942	7·3		53	40·66	2·293	—	5	49	45	26·18	14·57	—	5	50·32
4952	7·2		55	31·17	2·046	—	4	42	7	40·44	14·46	—	4	50·31
4956	8·9		55	50·24	4·978	—	4	154	3	12·64	14·44	—	4	50·46
(4968)	7·1		56	58·39	4·907	—	4	153	3	33·58	14·37	—	4	50 42

No. from B. A. C	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No of Observations.	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion.	No of Observations.	Mean Date of Observation.
		h.	m.	s.	s.	s.		°	'	"	"	"		1800+
4959	6·8	14	56	58·91	+3·510	0·000	4	115	12	5·10	+14·37	—	4	50·38
4965	6·8		57	48·28	2·127	—0·023	4	44	46	0·85	14·32	—	4	50·42
4967	6·9		57	55·86	1·394	—0·005	4	29	12	19·08	14·31	0·00	4	51·16
4972	7·1		58	31·98	3·481	—	4	113	36	38·36	14·27	—	4	50·42
4975	9·0		59	36·61	5·003	—	4	153	57	53·48	14·21	—	4	50·54
4979	6·5	15	0	5·38	3·531	—	4	115	55	4·31	14·18	—	5	50·60
4980	6·2		0	27·27	1·991	—0·015	4	41	16	3·13	14·15	0·00	4	50·34
4985	6·2		1	27·06	3·530	—0·012	4	115	45	23·26	14·09	—	4	50·60
4989	6·7		1	41·10	0·880	—0·006	4	23	29	50·80	14·08	+0·06	4	51·19
4992	5·9		1	59·17	1·702	—	4	34	51	52·32	14·06	—	4	51·42
4997	6·4		3	41·65	3·393	—	4	108	32	7·68	13·95	—	4	50·30
5000	6·9		4	34·00	2·429	—	4	56	21	0·86	13·90	—	4	50·38
5001	7·3		4	35·19	2·518	—	4	60	11	57·69	13·90	—	4	50·39
5007	5·3		5	2·21	4·971	—0·025	4	153	2	56·85	13·87	—0·08	4	50·41
5018	6·9		6	16·81	3·572	0·000	4	117	17	38·72	13·79	—	4	50·45
5019	7·9		6	34·49	1·942	—0·008	4	40	44	26·19	13·77	+0·09	4	50·78
5020	6·2		6	42·13	3·567	0·000	4	117	2	7·63	13·76	—	4	50·77
5025	7·0		7	44·57	4·130	—	2	137	20	38·94	13·69	—	2	50·82
5026	6·8		7	52·33	2·284	—0·012	4	51	10	15·59	13·69	0·00	4	50·74
5027	7·3		8	1·82	3·495	0·000	4	113	27	6·77	13·68	—	4	50·53
5033	6·6		8	44·59	2·165	—0·005	4	47	16	4·99	13·63	+0·06	4	50·94
5038	7·3		9	47·40	3·518	—	4	114	26	45·20	13·56	—	4	50·76
5039	7·0		10	22·36	3·504	0·000	3	113	43	7·66	13·53	—	1	50·41
5040	7·6		10	44·49	4·691	+0·009	4	148	37	3·85	13·50	—0·03	4	51·01
5041	6·8		10	52·96	3·505	0·000	5	113	43	8·56	13·49	—	4	50·44
5042	6·4		11	4·00	4·793	—0·017	4	150	6	39·40	13·48	—0·05	4	50·99
5045	6·9		11	30·27	3·592	0·000	5	117	44	14·50	13·45	—	4	50·96
5049	5·6		11	42·97	4·149	—	3	137	22	35·24	13·44	—	2	50·40
5051	7·1		11	47·97	3·543	—	4	115	26	10·29	13·43	—	4	50·65
5053	7·3		12	13·98	4·151	—0·042	2	137	21	56·21	13·40	+0·18	2	50·44
5058	6·2		12	55·50	0·612	—	4	22	5	1·56	13·36	—	4	51·13
5062	6·8		14	0·11	3·562	—	4	116	8	50·09	13·29	—	4	50·26
5071	6·0		15	40·19	1·759	—	4	37	29	56·83	13·18	—	4	50·51
5076	6·2		17	4·16	2·217	—0·007	4	49	52	50·47	13·09	+0·03	4	50·31
5077	7·3		17	6·32	+1·732	—0·014	4	37	7	3·32	13·08	+0·08	4	50·99
5078	7·7		17	8·61	—0·004	—0·011	4	18	14	39·44	13·08	+0·02	4	51·14
5080	6·3		17	32·41	+4·327	+0·007	4	141	4	7·57	13·06	—0·15	4	50·30
5081	6·8		17	42·86	4·685	—0·031	4	147	49	20·04	13·05	+0·04	4	50·33
5083	8·2		17	58·71	4·829	—	4	149	57	52·23	13·03	—	4	50·42
5091	6·3		20	7·95	0·980	—	4	26	7	19·33	12·88	—	4	51·16
5092	7·7		20	15·76	1·948	—	4	42	24	30·23	12·87	—	4	50·38
5101	7·4		22	40·19	+4·637	—0·012	4	146	33	32·32	12·71	—0·19	4	50·26
5102	8·2		22	43·12	—0·537	—0·033	4	15	59	50·30	12·71	—0·01	4	50·19
5105	6·8		23	25·07	+3·519	—	4	113	21	55·35	12·66	—	4	50·36
5106	7·7		23	40·06	4·663	+0·026	4	146	54	25·94	12·64	+0·12	4	50·44
5110	7·2		24	11·52	3·562	—	4	115	17	11·32	12·61	—	4	50·41
5111	6·7		24	17·19	3·533	—	4	113	58	31·83	12·60	—	3	50·63
	6·7		24	18·03			4	113	58	37·20			4	50·63
5113	7·8		24	36·44	1·905	—0·006	4	41	46	11·52	12·58	+0·04	4	50·39
5114	7·7		24	43·13	4·645	—	4	146	30	23·34	12·57	—	4	51·06
5115	5·3		24	53·11	1·176	0·000	4	28	48	39·89	12·56	—0·02	4	51·31

No. from B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Obser-vations.	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Obser-vations	Mean Date of Observa-tion.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800 +
5127	7·2	15	26	12·30	+3·640	—	5	118	32	32·90	+12·47	—	4	50·96
5128	7·0		26	19·38	3·564	—	4	115	13	34·77	12·46	—	4	50·95
5129	5·6		26	21·07	3·230	—	4	98	40	28·12	12·46	—	4	50·97
5133	7·0		27	4·47	3·641	—	5	118	29	39·27	12·41	—	5	50·63
5137	6·4		27	42·97	4·851	—0·014	4	149	24	5·99	12·37	+0·16	4	50·98
5141	8·2		27	59·68	5·112	—	4	152	41	51·81	12·35	—	4	50·99
5142	7·3		28	7·06	3·585	—	5	115	59	26·84	12·34	—	5	50·73
5157	6·5		30	1·13	2·058	—	5	46	20	1·73	12·21	—	5	50·97
5164	7·4		30	44·58	1·794	—	4	39	48	6·44	12·16	—	4	50·33
5170	6·9		32	32·64	4·398	—0·006	4	141	8	37·56	12·03	—0·01	4	50·26
5174	6·9		33	14·89	4·336	—0·014	4	139	43	52·62	11·98	—0·11	4	50·55
5175	7·2		33	17·40	2·032	—	4	45	54	16·63	11·98	—	4	50·36
5179	6·3		34	0·25	4·366	—0·045?	4	140	18	14·22	11·93	+0·10	4	50·50
5181	6·4		34	10·86	1·747	—0·015	4	39	5	10·31	11·92	+0·09	4	50·19
5182	6·3		34	16·16	5·374	—0·050?	4	154	57	54·87	11·91	—0·06	4	50·84
5183	7·1		34	19·02	4·748	—0·020	4	147	20	1·45	11·91	+0·10	3	50·98
5186	7·1		34	48·37	4·771	—0·045?	4	147	38	47·50	11·87	+0·16	4	51·01
5193	7·1		36	27·54	4·989	+0·006	4	149	53	55·90	11·76	—0·05	4	50·92
5195	6·8		36	31·92	3·685	—	4	119	33	52·09	11·75	—	4	50·45
5197	7·3		36	54·77	3·559	—	4	114	14	21·17	11·73	—	4	50·77
5198	6·8		37	5·68	3·638	—	4	117	35	9·55	11·71	—	4	50·96
5200	7·8		37	17·39	4·561	—0·082	4	143	55	32·04	11·70	0·00	3	50·80
5201	7·9		37	24·52	4·563	—	4	143	56	15·84	11·69	—	4	50·80
5202	6·6		37	45·89	3·903	0·000	5	127	26	9·72	11·66	+0·28	5	51·06
5208	7·1		38	38·57	3·139	—	4	93	35	17·01	11·60	—	4	50·99
(5210)	6·3		38	45·78	1·631	—0·015	4	37	9	50·56	11·59	—0·03	4	50·82
5209	6·2		38	45·97	4·505	0·000	4	142	44	31·81	11·59	—0·04	4	51·38
5211	7·0		38	55·00	3·592	—	3	115	31	1·50	11·58	—	4	50·98
5212	7·1		39	5·32	3·574	—	4	114	44	44·72	11·57	—	4	50·78
5213	6·4		39	8·00	4·303	+0·015?	4	138	26	46·35	11·57	—0·16	4	50·65
5217	6·9		39	17·67	5·381	—	4	154	41	29·45	11·55	—	4	51·07
5218	6·4		39	29·27	4·609	—0·005	4	144	35	30·69	11·54	—0·02	4	51·09
5220	6·7		39	33·66	3·543	—	4	113	21	57·84	11·53	—	4	51·36
5221	7·3		39	38·10	3·677	—	4	119	0	58·54	11·53	—	4	51·07
5225	6·8		40	53·73	4·232	—0·046	3	136	35	55·35	11·44	—0·11	3	50·79
5228	6·6		41	33·27	3·604	—0·023?	4	115	49	37·99	11·39	—	4	50·41
5229	6·6		41	44·56	4·165	+0·015?	4	134	49	35·09	11·38	+0·05	4	50·91
5231	6·8		41	47·74	4·391	—0·005	4	140	9	28·67	11·37	—0·19	4	50·80
5235	6·8		42	14·02	5·003	—0·022	4	150	17	21·62	11·34	—	3	50·82
5239	7·3		42	46·85	4·543	—	4	113	7	43·25	11·30	—	4	50·97
5243	6·9		43	1·07	3·611	—	4	116	3	58·17	11·29	—	3	50·41
5247	6·7		43	30·12	4·990	—	8	150	1	46·18	11·25	—	9	50·51
5248	6·1		44	0·53	1·437	—	4	34	9	44·81	11·21	—	4	51·30
5256	6·6		45	15·81	5·413	—0·028	4	154	35	42·00	11·12	+0·04	4	50·39
5258	6·6		45	22·88	3·635	—	4	116	53	17·73	11·11	—	4	50·36
5261	6·6		46	8·02	3·731	+0·031?	4	120	38	17·39	11·06	+0·05	4	50·50
5263	6·4		46	16·35	4·298	0·000	4	137	42	52·45	11·05	+0·03	4	50·46
5266	7·3		46	36·61	3·623	—	4	116	17	54·19	11·02	—	4	50·40
5275	7·4		48	4·96	3·647	0·000	4	117	11	58·68	10·92	—	4	50·40
5276	7·0		48	8·89	3·104	—	3	91	43	8·09	10·91	—	4	50·91

No from B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Obser-vations.	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Obser-vations.	Mean Date of Observa-tion.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800+
5279	6·9	15	48	46·86	+1·387	—0·014	4	33	43	45·20	+10·86	—0·02	4	50·23
5281	6·2		48	55·04	3·492	—	4	110	32	34·73	10·83	—	4	50·95
5286	6·4		49	35·78	3·582	0·000	4	114	23	38·15	10·81	—	4	50·89
5288	7·0		49	44·41	5·198	+0·046?	4	152	6	38·09	10·80	—	4	50·57
5291	7·0		50	5·70	3·331	—	4	103	0	18·93	10·77	—	4	50·76
5294	6·8		50	19·85	3·635	0·000	4	116	34	53·53	10·75	—	4	50·78
5296	7·4		50	20·78	3·713	0·000	4	119	38	56·37	10·75	—	4	50·99
5297	7·3		50	21·64	3·701	0·000	4	119	11	50·05	10·75	—	4	50·87
5300	7·6		51	1·51	5·035	0·000	4	150	4	19·66	10·70	0·00	4	50·64
5301	5·5		51	21·87	4·837	—0·056?	4	147	20	46·01	10·68	+0·13	3	50·72
5305	5·7		52	12·83	4·367	+0·017	4	138	48	18·46	10·61	—0·04	4	50·52
5307	6·3		52	55·02	1·153	—0·012	4	30	39	16·68	10·56	+0·03	4	51·27
5308	6·5		53	22·80	3·694	+0·037?	4	118	42	41·32	10·53	+0·15	4	50·39
5312	6·8		54	8·88	3·634	—	3	116	17	14·59	10·47	—	4	50·46
5313	5·5		54	13·72	1·431	—0·030	4	34	49	30·27	10·46	—0·09	5	51·32
5316	6·1		54	48·69	1·694	—0·009	4	39	41	24·43	10·42	+0·09	4	50·79
5317	6·4		54	54·63	3·587	0·000	5	114	18	24·53	10·41	—	5	50·71
5326	7·5		56	23·03	3·562	—	3	113	15	11·67	10·30	—	2	50·45
5328	6·9		56	38·14	5·282	—	5	152	33	24·90	10·28	—	5	50·75
5334	7·6		57	6·11	5·280	—0·012	4	152	30	57·71	10·25	—0·38	4	50·98
5335	6·5		57	10·22	3·563	0·000	6	113	11	34·33	10·24	—	6	50·48
5341	6·2		58	15·78	1·522	—0·006	3	36	39	57·55	10·16	+0·07	3	50·31
5345	6·6		58	52·32	3·586	0·000	4	114	3	14·52	10·11	—	4	50·36
5350	7·9		59	14·71	5·202	—	8	151	31	39·16	10·08	—	8	51·22
5353	8·1		59	32·62	5·506	—0·046	4	154	35	16·07	10·06	0·00	4	51·05
5354	6·5		59	46·92	3·569	0·000	4	113	16	49·48	10·04	—	4	50·46
5356	7·1	16	0	2·00	3·757	0·000	4	120	38	51·46	10·03	—	4	50·98
5364	6·8		1	6·76	3·650	—	4	116	30	27·86	9·94	—	4	50·59
5365	6·9		1	9·55	3·592	0·000	4	114	10	51·70	9·94	—	4	50·67
5370	6·8		1	27·80	4·739	—0·012	4	145	8	42·87	9·92	+0·15	4	50·64
5372	7·3		1	37·44	4·629	— ?	4	143	16	36·97	9·91	0·00	4	50·80
5378	7·2		2	23·21	3·658	0·000	3	116	45	15·16	9·85	—	3	50·40
5389	7·1		4	20·43	3·708	—	5	118	39	59·89	9·70	—	5	50·35
5391	7·2		4	27·53	3·737	—	4	119	49	19·55	9·69	—	4	51·05
5393	6·8		4	43·43	3·782	0·000	4	121	15	52·41	9·67	—	4	51·02
5394	6·6		4	45·02	3·593	0·000	4	114	1	59·01	9·67	—	4	50·98
5402	6·8		5	45·10	4·612	+0·011	4	142	42	12·46	9·59	+0·11	4	51·04
5406	6·0		5	55·37	0·133	—0·021	4	21	47	40·73	9·57	+0·04	4	51·37
5407	7·4		5	57·64	4·952	—0·016	4	148	0	35·67	9·57	+0·06	3	51·05
5408	6·6		6	0·34	3·456	—	4	108	8	44·76	9·57	—	4	50·80
5409	7·3		6	8·22	3·665	—	4	116	49	15·54	9·56	—	4	50·78
5416	7·6		6	38·24	3·756	—	5	120	14	20·34	9·52	—	4	51·10
5417	6·0		6	49·50	1·982	—	4	47	14	20·29	9·51	—	4	50·81
5418	6·9		7	26·29	3·593	0·000	4	113	54	7·66	9·46	—	4	50·78
5421	7·0		7	30·33	3·734	—	4	119	21	51·97	9·46	—	4	50·87
5424	6·5		8	28·03	4·744	+0·040?	3	144	46	2·77	9·38	—0·06	4	50.93
5430	7·0		9	0·48	3·691	—	4	117	39	58·96	9·34	—	4	50·78
5433	7·2		9	51·08	3·699	0·000	6	117	54	42·99	9·27	—	5	50·86
5441	7·6		11	11·74	3·734	—	4	119	8	52·05	9·17	—	4	50·42
5443	7·1		11	26·81	4·993	—	4	148	14	32·36	9·15	—	4	50·46

No from B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Obser-vations.	North Polar Distance, January 1, 1850.			Annual Precession	Proper Motion.	No. of Obser-vations.	Mean Date of Observa-tion.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800+
5449	6·9	16	12	19·90	+3·585	—	4	113	20	37·00	+9·08	—	4	50·40
5452	6·7		13	33·83	2·600	—	4	68	30	5·57	8·98	—	4	50·00
5454	6·4		14	3·71	5·493	—0·011	4	153	42	29·46	8·94	—0·15	4	50·38
5459	6·0		14	44·66	0·983	—0·015	4	29	52	48·64	8·89	—0·01	4	50·25
5460	5·6		14	46·50	2·062	—0·021	4	49	55	48·88	8·89	+0·01	4	50·44
5461	6·4		14	59·53	1·672	—0·011	4	40	36	2·77	8·87	—0·03	4	50·46
5468	6·8		15	33·25	3·794	—	4	121	4	7·77	8·83	—	4	50·46
5471	7·5		16	8·99	3·803	—	4	121	21	8·27	8·78	—	4	50·48
5476	7·5		16	23·26	+3·753	—	5	119	34	19·08	8·76	—	4	50·65
5483	6·4		17	3·39	—1·064	—0·013	4	16	14	23·25	8·71	—0·03	4	51·34
5485	6·5		17	16·27	+4·956	+0·006	4	147	24	51·00	8·69	+0·07	5	50·82
5486	5·9		17	31·65	5·272	+0·003	4	151	17	36·23	8·67	—0·09	4	50·56
5487	7·0		18	7·34	3·738	—0·029?	4	118	56	38·05	8·62	+0·06	3	50·84
5493	6·5		19	17·01	3·014	—	4	87	18	28·78	8·53	—	5	51·01
5494	5·6		19	38·85	3·225	+0·018	4	97	15	2·25	8·51	+0·22	4	50·89
5497	7·1		20	8·40	1·857	—0·010	5	44	57	56·82	8·46	+0·06	4	50·62
5499	6·8		20	42·68	1·482	—0·007	4	37	22	0·10	8·42	0·00	4	51·42
5500	6·6		20	58·36	3·705	0·000	4	117	34	52·35	8·40	—	4	50·44
5502	5·9		21	8·42	1·300	0·000	4	34	27	8·06	8·39	—0·01	4	50·41
5503	7·2		21	11·75	1·513	—0·015	3	37	56	30·15	8·38	+0·01	4	51·50
5504	6·9		21	15·27	2·729	—	5	74	18	41·60	8·38	—	4	50·90
5505	6·7		21	21·23	5·697	—0·002	4	155	10	8·19	8·37	+0·05	4	51·06
5507	7·2		21	34·35	2·727	—	4	74	13	54·26	8·35	—	5	51·09
5509	6·3		21	47·60	+0·780	—0·019	4	27	57	41·15	8·33	—0·01	4	51·54
5514	5·8		22	9·46	—0·177	—0·033	4	20	32	38·40	8·30	+0·01	4	51·54
5517	7·5		22	43·30	+4·949	—	4	147	1	42·14	8·26	—	4	50·84
5518	7·6		23	2·10	3·738	0·000	4	118	42	55·15	8·23	—	4	51·36
5522	7·2		23	28·74	3·811	—	5	121	13	36·26	8·20	—	5	51·39
5526	7·8		23	42·51	5·567	—0·054?	3	153	55	44·60	8·17	—	3	51·36
5527	6·1		24	2·74	2·606	+0·033?	4	69	11	22·94	8·16	—	4	50·43
5529	8·5		24	44·11	2·816	—	2	78	14	58·82	8·10	—	1	50·57
5530	6·6		24	48·16	2·563	—	4	67	28	41·42	8·09	—	4	50·16
5532	5·7		25	35·07	2·814	—	2	78	11	9·81	8·03	—	3	50·94
5537	7·2		26	27·17	2·839	—	4	79	18	36·92	7·96	—	4	49·81
5540	6·8		27	41·38	5·213	—?	4	150	8	14·75	7·87	—	4	50·32
5543	7·2		28	7·90	5·084	—0·013	4	148	33	46·39	7·83	+0·03	4	50·29
5549	7·0		28	59·41	1·577	+0·003	4	39	32	27·40	7·76	+0·06	4	50·43
5550	6·9		29	11·76	5·339	+0·072?	4	151	29	5·66	7·75	—	4	50·22
5554	9·0		29	41·72	5·263	—0·006	4	150	37	36·08	7·70	+0·75	2	50·74
5556	6·8		29	48·68	3·773	—	4	119	37	12·75	7·69	—	4	50·49
5557	7·7		29	50·58	3·788	0·000	4	120	9	39·31	7·69	—	4	50·83
5559	6·7		30	18·74	1·457	—0·014	4	37	27	0·05	7·65	+0·02	4	51·25
5564	7·0		30	54·25	3·668	—0·035?	4	115	45	33·51	7·60	—	4	50·82
5568	7·0		31	48·37	1·745	—0·011	4	43	4	53·45	7·53	+0·05	3	50·66
5569	6·9		32	18·48	3·716	—	4	117	30	42·40	7·49	—	4	50·06
5570	7·3		32	29·98	5·342	+0·058?	4	151	22	21·14	7·48	—	4	50·31
5571	6·6		32	31·18	3·628	0·000	5	114	10	17·80	7·47	—	4	50·69
5572	7·3		32	34·89	3·794	—	4	120	13	59·83	7·47	—	4	50·86
5576	7·8		32	42·32	3·753	—	4	118	49	33·17	7·45	—	4	50·84
5588	6·5		34	0·71	3·842	0·000	4	121	48	54·25	7·35	—	3	50·70

No. from B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Observations.	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion.	No of Observations	Mean Date of Observation.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800+
5589	7·2	16	33	59·79	+3·817	—0·020	4	120	56	10·34	+7·35	—	5	50·91
5595	6·8		34	36·18	3·692	0·000	4	116	30	56 54	7·30	—	4	51·05
5597	6·5		34	47·23	2·486	—0·012	4	64	50	54·87	7·29	+0·10	4	50·66
5599	5·9		34	58·36	1·202	—0·013	4	33	41	22·73	7·27	—0·09	4	51·32
5600	6·8		34	59·25	3·710	0·000	5	117	10	6·05	7·27	—	5	51·10
5601	6·1		35	24·41	0·583	—0·009	4	26	37	28·83	7·24	+0·06	4	51·34
5605	6·8		35	46·55	3·806	0·000	5	120	31	22·96	7·21	—	5	50·88
5608	7·2		36	33·90	3·690	—	4	116	21	58·13	7·14	—	4	50·06
5612	7·1		37	17·18	3·829	—0·045?	4	121	10	25·49	7·08	—	4	50·49
5613	7·0		37	21·87	5·767	—0·008	4	155	6	15·32	7·08	—0·09	4	50·87
5615	7·2		37	43·15	2·134	—	4	53	12	23·47	7·05	—	4	50·84
5620	6·1		38	34·78	2·711	—	4	73	58	25·40	6·98	—	4	50·71
5622	7·3		38	49·78	3·822	0·000	4	120	55	44·76	6·96	—	4	50·23
5626	8·1		39	33·67	5·532	—	4	152	58	10·52	6·90	—	4	50·88
5629	5·9		39	54·16	1·211	—0·003	4	34	1	57·85	6·87	—0·08	4	51·30
5630	7·0		39	56·54	3·837	—	5	121	22	52 76	6 86	—	4	50·45
5634	7·4		41	2·86	2·817	—	4	78	35	55·27	6·77	—	4	50·83
5636	7·1		41	26·71	5·543	—0·030	5	153	0	42·54	6·74	0·00	6	50·64
5641	7·3		42	12·80	3·647	0·000	4	114	34	16·51	6·68	—	4	51·06
5643	6·1		42	26·63	1·125	—0·007	4	32	56	54·88	6·66	—0·06	4	51·42
5644	6·2		42	31·43	1·914	—0·011	4	47	29	28·94	6·65	+0·02	4	51·04
5645	7·4		42	44·02	5·382	+0·060?	4	151	23	12·69	6·64	+0·43	4	50·90
5647	6·4		42	39·12	2·767	—	4	76	28	23·35	6·64	—	4	50·81
5650	6·9		43	4·36	3·669	—	4	115	20	25·64	6·61	—	4	50·10
5653	7·0		43	27·65	3·848	0·000	4	121	37	20·24	6·57	—	4	50·84
5657	7·2		43	43·26	5·775	0·000	4	154	57	13·33	6·55	+0·02	4	50·93
5669	7·2		44	59·01	3·860	—	3	121	56	13·68	6·45	—	3	51·09
(5671)	6·6		45	2·00	3·812	—0·003	4	120	20	5·34	6·44	—0·03	4	51·05
5670	7·4		45	5·33	5·400	+0·062	4	121	29	37·47	6·45	—	4	51·21
5672	6·6		15	11·40	3·825	— ?	3	120	43	36·48	6·43	—	2	51·10
5673	{ 6·6 7·4 }		45	{ 8·59 19·55 }	} 3·676	—	{ 3 2 }	115	{ 34 33	29·88 34·41	} 6·43	—	{ 4 3	51·16 51·39
5676	7·7		45	30·96	3·790	0·000	3	119	36	4·93	6·40	—	3	51·31
5678	7·1		45	31·78	3·837	—	4	121	9	2·06	6·40	—	2	51·20
5679	7·0		45	45·80	3·870	0·000	3	122	15	15·21	6·38	—	3	50·53
5681	5·6		45	50·07	4·156	—0·019	1	130	34	36·93	6·38	—0·11	4	51·30
5684	7·0		46	14·70	3·839	—	2	121	13	37·30	6·34	—	1	50·89
5686	7·0		46	32·99	2·715	0·000	3	74	20	25·59	6·32	—	3	51·11
5687	7·6		46	32·59	3·670	—	3	115	17	9·27	6·32	—	3	50·72
5690	7·1		46	40·67	3·836	—0·059 ?	3	121	4	52·54	6·30	—	1	51·46
5694	7·2		47	16·45	3·867	—	4	122	5	24·32	6·26	—	4	50·06
5699	6·6		47	56·44	4·844	—0·054 ?	4	144	21	24·40	6·20	0·00	4	50·28
5704	7·2		49	2·45	3·688	—0·038 ?	4	115	49	13·97	6·11	—1·22?	4	50·01
5715	6·2		51	39·62	5·076	+0·008	4	147	29	16·69	5·89	+0·02	4	50·50
5716	7·3		51	50·53	2·712	—	4	74	19	5·84	5·88	—	4	50·01
5717	6·6		51	58·98	0·801	—0·007	4	29	23	47·44	5·87	0·00	4	51·36
5722	9·0		52	50·41	4·964	+0·149 ?	3	145	55	7·33	5·80	—3·01?	3	50·90
5726	6·8		53	10·42	2·917	0·000	4	83	11	12·94	5·77	—	4	50·89
5728	6·9		53	16·35	0·627	—0·062	4	27	39	38·88	5·75	+0·01	4	51·37
5730	7·2		54	22·62	3·642	—	5	114	1	13·47	5·66	—	4	50·19
5732	6·3		54	43·90	2·723	—	4	74	49	37·86	5·64	—	4	50·42

No. from B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No of Observations.	North Polar Distance, January 1, 1850.			Annual Precession	Proper Motion.	No. of Observations	Mean Date of Observation.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800 +
5737	6·7	16	55	1·21	+3·763	—	3	118	21	14·94	+5·61	—	4	50·25
5739	7·1		55	7·71	3·847	—	4	121	8	45·33	5·60	—	4	50·85
5742	6·9		55	19·64	3·643	—	3	114	1	23·80	5·59	—	3	50·76
5743	6·8		55	23·78	3·620	—	4	113	10	23·88	5·58	—	4	50·92
5750	7·1		56	29·50	3·772	+0·051 ?	4	118	39	37·84	5·49	+1·29 ?	4	51·06
5751	6·7		56	26·15	5·437	—0·014	4	151	28	12·79	5·49	—0·08	4	51·14
5754	6·9		56	45·90	4·534	+0·015	4	138	40	29·04	5·46	+0·20	4	51·16
5756	7·0		56	56·99	3·812	—	4	119	56	17·85	5·45	—	4	51·19
5762	6·7		58	6·32	3·841	—	4	120	52	11·22	5·35	—	4	50·95
5764	6·7		58	17·73	5·119	—0·010	4	147	49	31·61	5·34	+0·10	4	51·12
5766	7·3		58	21·36	5·655	—	4	153	29	14·65	5·32	—	4	50·95
5767	6·9		58	45·12	3·666	—	4	114	47	37·03	5·30	—	4	50·94
5768	6·3		59	13·14	+3·821	0·000	4	120	11	56·45	5·26	+0·30 ?	4	51·07
5769	6·6		59	16·75	—1·245	—0·020	4	16	38	50·38	5·25	+0·01	4	51·02
5772	5·7		59	50·86	+4·333	—0·007	4	134	21	27·91	5·20	+0·18	4	50·31
5773	7·7	17	0	18·22	5·558	0·000	4	152	32	31·69	5·17	—0·26 ?	4	50·92
5777	6·8		1	18·54	2·147	—	4	54	28	26·82	5·08	—	4	50·48
5787	7·3		2	35·56	2·837	—	4	79	45	38·92	4·97	—	3	50·68
5790	6·8		2	52·82	1·956	—0·013	4	49	17	6·81	4·95	+0·01	4	50·85
5791	7·0		3	1·24	3·677	—	4	115	3	50·07	4·94	—	4	50·23
5792	6·2		3	2·02	3·747	—	4	117	34	16·02	4·93	—	4	50·10
5793	6·4		3	14·24	3·889	—	4	122	15	1·28	4·92	—	5	50·83
5796	7·0		4	38·60	3·750	—	4	117	36	46·32	4·80	—	4	50·85
5799	6·9		4	50·52	5·587	—	4	152	41	55·12	4·78	—	4	51·07
5805	6·2		5	38·29	4·247	+0·024	4	132	9	40·29	4·72	+0·15	4	51·28
5806	6·1		5	56·93	5·280	—0·004	4	149	31	19·89	4·69	+0·07	4	51·17
5809	6·3		6	16·89	3·822	—	5	120	1	54·66	4·66	—	5	50·96
5812	6·5		6	48·52	4·623	—	4	140	2	15·63	4·62	—	4	51·18
5814	7·1		6	58·46	5·672	—0·060 ?	3	153	24	53·35	4·59	—	3	51·17
5815	7·2		7	14·23	3 681	0·000	6	115	7	50·26	4·58	0·00	6	51·10
5818	8·1		7	19·02	3·827	0·000	3	120	10	37·79	4·57	—	3	51·13
5819	7·1		7	32·62	4·449	—?	3	136	37	44·36	4·54	+0·12	4	51·07
5820	7·0		7	46·33	3·822	—	3	119	59	30·46	4·53	—	3	51·04
5825	6·7		8	45·15	3 977	+0·107	4	124	48	55·49	4·45	+0·11	4	50·91
5826	7·2		8	50·12	3·814	—	3	119	42	18·19	4·44	—	4	51·39
5833	7·1		9	36·71	3·861	0·000	4	121	11	40·34	4·37	—	4	50·93
5835	6·3		9	56·84	5·600	—	4	152	42	23·49	4·34	—	3	51·11
5838	7·1		10	56·57	3·801	—	4	119	12	12·42	4·26	—	4	50·74
5848	7·4		12	32·73	3·837	—	4	120	20	46·05	4·12	—	4	50·04
5859	6·2		14	18·96	4·660	—0·011	4	140	29	20·31	3·97	—0·15	4	50·54
5861	7·7		14	55·11	3·783	—	4	118	30	23·80	3·92	—	3	50·09
5869	6·9		15	56·78	3·814	0·000	3	119	31	37·68	3·83	—	4	50·11
5870	6 2		16	1·71	4·760	—0·015	4	142	9	23·60	3·82	0·00	4	50·87
5872	6·7		16	14·47	4·948	—0·015	5	145	1	57·98	3·81	+0·02	4	50·91
5874	6·1		16	48·00	1·964	—0·005	4	49	52	32·23	3·76	+0·13	4	50·42
5875	7·0		16	48·80	3·777	0·000	4	118	16	32·25	3·76	+0·05	4	50·30
(5879)	7·0		17	32·39	3·713	— ?	4	116	11	38·89	3·69	— ?	4	50·92
5878	6·8		17	38·65	3·706	—	5	115	48	17·56	3·68	—	5	50·95
5882	7·1		17	47·30	3·788	—	4	118	37	56·33	3·67	—	3	51·10
(5898)	7·2		18	31·37	3·861	— ?	4	121	4	25·89	3·61	— ?	4	51·15

No from B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Observations	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Observations.	Mean Date of Observation.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800 +
5887	6·6	17	18	33·16	—0·964	—0·009	4	18	3	10·80	+3·61	—0·03	4	51·35
5889	6·1		18	38·53	+5·080	—	4	146	47	34·90	3·60	—	4	51·06
5892	7·4		19	0·00	3·869	—	4	121	15	3·81	3·57	—	4	50·85
5894	6·6		19	4·53	2·892	—	4	82	16	8·00	3 56	—	4	50·96
5895	6·1		19	15·24	2·076	—	4	52	54	41·76	3·55	—	4	51·14
5897	6·5		19	31·10	3·873	—0·027?	8	121	24	15·15?	3·52	0·00	4	51·15
5908	7·9		22	17·45	3·886	—0·036?	4	121	42	26·18	3·28	—0·13	4	50·38
5910	5·6		22	40·73	3·092	—	4	90	56	1·32	3·25	—	4	50·44
5914	7·6		23	16·29	3·926	0·000	4	112	56	30·16	3·20	—	4	50·48
5916	6·8		23	30·03	3·819	—	4	119	32	8·30	3·18	—	4	50·54
5917	5·8		23	44·99	0·768	—	4	29	49	29·46	3·16	—	4	50·78
5924	7·5		24	55·09	3·889	+0·024?	4	121	45	41·83	3·06	—0·05	4	50·77
5929	6·2		25	39·18	2·000	—0·010	4	51	0	10·70	2·99	+0·03	4	50·86
5938	7·0		27	13·11	3·898	+0·055?	4	122	1	31·29	2·86	+0·05	4	50·10
5943	7·3		28	16·17	3·785	—	5	118	20	18·88	2·77	—	4	50·05
5944	5·8		28	21·43	1·905	—0·014	4	48	38	51·60	2·76	+0·07	4	50·99
5946	6·9		28	45·30	3·774	—	5	117	56	58·45	2·72	—	5	51·06
5952	6·8		29	33·17	3·785	—	5	118	18	58·77	2·66	—	4	51·21
5955	6·7		29	46·72	3·819	—	4	119	26	15·50	2·64	—	4	51·13
5956	7·5		29	51·49	3·832	—	4	119	52	1·70	2·63	—	4	51·01
5961	7·1		30	53·18	3·801	0·000	4	118	50	1·90	2·54	—	4	50·84
5965	7·5		31	14·39	5·821	+0·038	4	154	14	46·54	2·51	—0·12	4	50·89
5966	7·7		31	16·77	3·770	—	4	117	48	14·88	2·51	—	4	50·94
5969	6·4		32	1·55	5·151	—	4	147	27	59·88	2·44	—	4	50·27
5973	7·6		32	34·93	4·521	—	3	137	33	3·96	2·39	—	3	51·11
5977	6·3		33	16·41	3·931	+0·034?	4	122	58	18·24	2·34	+0·88?	4	50·33
5980	6 9		33	46·62	3·920	+0·015?	4	122	35	4·28	2·29	—0·11	4	50·54
5983	7·6		33	53·27	3·839	—0·045?	4	120	5	55·48	2·27	+1·40?	3	50·47
5989	7·6		35	9·18	3·651	—	4	113	36	15·90	2·17	—	3	50·02
5993	7·2		35	31·74	5·826	—0·011	4	154	14	33·74	2·14	—0·05	4	50·47
5997	6·8		36	4·78	1·807	0·000	4	46	27	13·24	2·09	—0·01	4	50·35
6000	7·2		36	31·15	5·559	—0·006	4	151	51	52·32	2·05	—0·48	4	50·44
6011	7·0		38	28·35	3·923	—0·067?	5	122	36	31·03	1·88	—1·52?	4	50·11
6013	6·7		38	38·61	1·778	—0·007	4	45	50	50·51	1·87	—0·07	4	49·61
6023	7·2		40	47·34	3·668	0·000	4	114	9	7·52	1·68	—0·20	4	49·99
6032	6·8		42	34·76	3·879	—0·062	4	121	16	53·61	1·51	+1·40	4	50·05
6035	6·8		43	3·25	2·838	—	4	80	6	3·51	1·48	—	4	50·48
6036	6·7		43	6·07	1·607	—	4	42	20	1·99	1·48	—	4	50·61
6037	6·1		43	19·77	3·994	+0·032	2	124	41	18·32	1·46	+0·08	4	50·31
6039	6·2		43	26·60	3·903	0·000	4	121	59	22·43	1·45	+0·30	4	50·53
6040	7·7		43	26·75	5·407	+0·073	4	150	17	17·23	1·45	+0·22	4	50·58
6042	6·0		43	45·19	3·996	—?	1	124	44	45·09	1·42	+0·13	1	50·52
6043	6·1		43	55·22	3·995	—?	3	124	42	42·42	1·41	+0·02	3	50·83
6044	7·0		44	10·12	3·757	—	4	117	14	32·50	1·38	—	4	50·90
6055	6·2		45	50·90	4·373	+0·008	4	134	17	34·51	1·24	0·00	4	50·70
6057	7·3		46	27·79	3·919	—	4	122	26	35·23	1·18	—	4	50·69
6058	6·7		47	0·62	3·926	0·000	3	122	39	32·66	1·14	—	4	50·67
6059	7·5		47	2·86	3·743	—	4	116	44	22·93	1·13	—	4	49·61
6063	5·7		47	13·80	3·782	—	4	118	2	6·05	1·12	—	4	50·69
6072	5·8		49	8·39	3·803	—	4	118	44	11·30	0·95	—	4	50·21

No from B. A. C	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession	Proper Motion.	No. of Obser-vations	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Obser-vations.	Mean Date of Observa-tion.
		h.	m.	s.	s	s.		°	′	″	″	″		1800+
6075	7·0	17	49	41·43	+3·822	—0·045	4	119	22	9·78	+0·90	—0·04	4	50·31
6076	7·3		50	3·27	3·951	—	4	123	23	24·09	0·87	—	4	50·45
6090	7·1		53	6·72	5·879	—0·008	4	154	32	56·46	0·60	—0·16	4	50·81
6095	7·2		53	25·17	1·805	—0·005	4	46	34	1·19	0·58	—0·06	4	49·62
6100	5·4		54	8·36	5·771	0·000	4	153	39	53·48	0·51	+0·11	4	50·35
6108	7·2		55	31·66	3·712	—	4	115	36	21·62	0·39	—	2	50·22
6113	6·9		56	6·91	3·820	—	3	119	16	45·33	0·34	—	3	50·49
6129	6·4		59	13·44	1·562	—0·003	4	41	32	26·64	0·07	+0·02	4	50·53
(6131)	7·5		59	17·19	3·879	—0·025?	4	121	10	26·53	0·06	+0·60?	4	50·61
6130	7·0		59	18·08	3·843	—	4	120	0	27·08	0·06	—	4	50·36
6132	6·8		59	37·66	3·708	—	4	115	29	15·01	0·03	—	4	50·77
6136	7·0		59	50·13	5·777	—0·018	4	153	42	44·03	0·02	+0·11	4	50·82
6137	6·7		59	48·69	3·018	—	4	87	31	56·53	0·02	—	4	50·79
6139	6·8	18	0	10·11	3·930	+0·045?	4	122	43	52·79	—0·01	+0·48?	4	50·88
6144	7·3		0	16·02	3·911	—	4	122	9	43·99	0·02	—	4	50·92
6148	6·7		1	25·73	5·704	—?	3	153	5	5·82	0·12	—0·03	4	50·85
6158	6·5		2	21·62	3·554	—	5	109	51	56·59	0·21	—	5	51·08
6160	6·9		2	26·42	3·809	—	4	118	55	38·16	0·21	—	5	51·15
6162	6·2		2	57·19	1·804	—0·010	4	46	33	16·86	0·26	+0·02	5	51·19
6163	7·0		3	8·79	3·790	—	4	118	15	54·41	0·28	—	4	51·08
(6166)	6·7		3	51·60	3·906	—	3	121	59	55·03	0·34	—	3	49·96
6165	7·0		3	56·00	3·642	—	4	113	8	52·54	0·30	0·00	3	51·15
6170	7·1		5	9·68	5·802	—?	4	153	55	11·65	0·45	+0·06	4	51·18
6173	6·7		5	29·58	3·836	—0·074?	3	119	51	33·96	0·49	+2·31?	4	50·90
6175	7·4		5	49·30	3·918	—	4	122	22	48·67	0·51	—	4	50·91
6181	7·7		6	28·84	3·880	—	4	121	11	59·08	0·57	—	4	49·78
6182	7·1		6	35·70	3·885	—	3	121	21	41·19	0·58	—	5	50·63
6184	7·0		7	21·26	1·072	0·000	2	33	45	57·88	0·64	0·00	4	51·41
6185	6·4		7	26·70	1·215	—0·006	4	35	45	23·29	0·65	—0·25	4	51·50
6187	6·5		7	31·46	3·774	—	3	117	45	19·33	0·66	—	3	50·89
6188	6·9		7	33·15	3·884	—	4	121	20	30·07	0·66	—	4	50·80
6190	6·6		7	53·63	3·802	—	4	118	41	50·43	0·69	—	4	51·24
6192	6·9		7	57·98	3·953	—	3	123	26	34·43	0·70	—	3	49·89
6193	6·1		8	4·32	1·999	—0·008	4	51	15	55·77	0·71	—0 02	4	51·31
6196	6·1		9	1·36	3·142	—	4	93	2	36·04	0·79	—	4	51·22
6197	5·9		9	8·73	3·301	—	4	99	48	15·10	0·80	—	4	51·10
6199	7·0		9	24·87	3·712	—	4	115	39	14·17	0·83	—	4	50·68
6202	7·4		10	43·80	3·885	—0·025?	4	121	22	24·93	0·94	—0·31?	4	50·45
6203	6·0		10	58·45	1·863	—0·013	4	47	53	22·42	0·96	+0·03	5	51·13
6204	7·2		11	3·22	3·951	—	4	123	23	28·83	0·97	—	4	49·61
6207	7·2		11	17·75	5·701	—?	3	153	5	2·84	0·99	+0·12	4	50·80
6212	6·9		11	33·06	3·914	—0·075?	3	122	14	26·92	1·02	—0·77?	4	50·84
(6214)	7·0		11	53·70	3·726	—	5	116	8	43·91	1·04	—	5	50·94
6213	5 9		11	54·52	2·902	—	4	82	47	48·26	1·04	—	4	51·19
6216	7·0		12	3·07	1·051	+0·006	4	33	27	42·21	1·05	—0·05	4	51·43
6218	6·5		12	20·99	1·915	—0·022	4	49	7	10·37	1 08	—0·12	4	51·22
6219	6·9		12	26·14	5·139	—?	4	147	9	48·73	1·09	+0·04	4	51·14
6220	6·2		12	30·85	3·795	0·000	4	118	29	32·79	1·09	—0·11	4	51·22
6222	7·3		12	57·45	3·637	—	4	112	59	6·79	1·13	—	5	50·94
6236	7·1		14	49·61	3·914	—	4	122	21	44·77	1·29	—	4	50·53

No. from B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No of Obser-vations.	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Obser-vations.	Mean Date of Observa-tion.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800+
6244	7·1	18	16	10·31	+3·899	—	4	121	49	50·43	—1·41	—	4	50·51
6245	5·7		16	11·17	2·644	—	4	72	14	40·52	1·41	—	5	50·84
6246	6·9		16	24·97	1·407	0 000	4	38	42	58·67	1·44	0·00	4	51·26
6249	6·6		17	2·72	3·855	—	4	120	28	13·44	1·49	—	4	49·62
6252	6·4		17	21·10	1·501	—0·012	4	40	20	44·73	1·52	—0 03	4	50·65
6255	5·7		17	42·17	1·535	—0·004	3	40	57	7·81	1·55	—0·08	4	50·50
6256	8·4		17	52·36	3·891	+0·041?	4	121	36	48·90	1·56	—0·35?	5	50·31
6258	6·8		17	57·15	1·411	+0·006	4	38	46	9·82	1·57	—0·03	4	51·38
6260	6·0		18	13·96	3·837	—	4	119	54	2·80	1·59	—	4	50·87
6261	6·5		18	22·58	3·741	0·000	4	116	43	0·30	1·61	—	4	50·94
6264	6·1		18	44·55	3·745	—	4	116	50	26·79	1·64	—	4	50·92
6266	7·2		19	1·51	3·639	—	4	113	5	9·57	1·66	—	5	50·76
6270	7·1		19	36·61	3·740	—	3	116	40	10·69	1·72	—	4	51·11
6271	7·6		19	39·23	3·819	—	4	119	20	47·09	1·72	—	4	51·02
6280	7·7		20	36·97	2·918	—	5	83	29	16·29	1·81	—	4	51·33
6283	7·2		21	0·62	3·805	—	4	119	53	17·66	1·84	—	5	50·96
6286	7·1		21	22·42	+3·645	—	4	113	20	40 78	1·86	—	4	51·17
6288	6·7		21	24·72	—0·895	—	4	18	33	27·98	1·87	—	4	51·43
6295	6·7		22	41·54	+3·817	—	5	119	17	24·67	1·98	—	4	50·88
6303	7·0		23	15·37	3·434	—	4	105	16	56·69	2·03	—	3	50·61
6310	7·6		24	36·46	3·869	—	4	120	59	21·72	2·15	—	4	49·81
6311	7·2		24	37·52	0·804	—0·010	4	30	23	15·64	2·15	—0·01	5	51·40
6318	6·6		25	37·88	0·820	—0·002	5	30	32	57·29	2·24	—0·06	4	51 41
6319	7·2		26	8·27	3·839	—	4	120	2	59·09	2·28	—	3	49·62
6321	6·7		26	25·19	3·831	—	4	119	48	42·86	2·31	—	4	50·60
6327	7·0		27	34·40	3·795	—	4	118	37	28·99	2·41	—	4	50·58
6328	6·7		27	42·04	5·888	—0·036	5	154	46	7·99	2·42	+0·03	4	50·98
6331	7·1		27	54·57	3·711	—	4	115	46	33·83	2·44	—	4	50·55
6334	6·8		28	31·26	3·926	—	4	122	48	5·96	2·49	—	4	50·91
6335	6·3		28	44·89	1·373	—0·011	4	37	59	42·84	2·51	—0·04	3	51·41
6337	7·0		28	58·37	5·874	— ?	3	154	40	51·74	2·53	0 00	4	51·00
6338	7·7		28	59·60	3·704	—0·028?	3	115	34	33·83	2·53	—	4	51·08
6339	7·1		29	6·12	3·841	0·000	4	120	9	1·18	2·54	—	4	51·23
6342	7·2		29	14·19	3·856	—0·035?	4	120	38	30·72	2·56	—	4	51·24
6344	7·5		29	40·76	3·936	—	4	123	7	9·45	2·59	—	4	51·04
6345	7·4		29	46·49	3·784	—	4	118	18	22·50	2 60	—	4	51·21
6346	6·7		29	55·83	3·642	0·000	3	113	18	26·64	2·61	—	3	51·11
6350	6·1		30	31·96	1·360	—0·002	4	37	45	49·44	2·66	—0·04	4	51·51
6351	8·0		30	36·00	3·707	—	2	115	37	55·84	2·67	—	3	50·97
6354	6·2		31	30·63	5·482	+0·063?	4	151	13	58·46	2·74	—	4	50·80
6364	6·9		34	42·73	1·930	0·000	4	49	11	53·69	3·03	—0·02	4	50·44
6368	7·1		35	34·99	1·176	+0·005	5	34	53	30·54	3·10	—0 09	4	51·31
6373	7·0		36	34·42	0·731	—0·008	4	29	25	37·56	3·19	—0·09	4	51·32
6374	6·9		36	39·87	3·761	—	4	117	39	0·79	3·19	—	5	49·80
6377	7·2		37	14·19	3·826	—	4	119	46	56·53	3·24	—	4	50·17
6382	7·2		38	9·92	3·785	0·000	4	118	26	7·53	3·32	—	4	49·98
6389	7·0		39	15·86	3·922	—	4	122	52	13·61	3·42	—	4	50·32
6393	6·3		39	36·89	0·530	—0·008	4	27	23	55·20	3·45	+0·05	2	50·45
6396	7·7		40	14·99	3·750	—	3	117	17	17·32	3·51	—	3	50·55
6400	7·2		41	7·87	3·630	—	4	113	0	47·67	3·58	—	4	50·65

No from B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Obser-vations.	North Polar Distance, January 1, 1850			Annual Precession.	Proper Motion	No of Obser-vations.	Mean Date of Observa-tion.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800 +
6403	8·1	18	41	19·03	+3·865	—	3	121	7	40·76	—3·60	—	3	50·41
6404	6·5		41	24·71	1·916	—0·012	3	48	43	0·32	3·61	—0·03	2	50·91
6408	7·1		42	4·38	3·750	—	4	117	19	55·78	3·67	—	4	50·55
6410	6·2		42	31·59	0·711	—0·005	4	29	6	35·99	3·70	—0·04	4	51·19
(6414)	6·5		43	3·68	3·857	—	4	120	54	20·67	3·75	—	4	50·87
6413	6·3		43	5·53	3·815	—	4	119	33	3·63	3·75	—	4	50·66
6416	6·4		43	8·86	3·735	—	4	116	49	15·42	3·75	—	4	50·81
6419	6·4		43	21·77	1·389	+0·005	4	37	10	29·91	3·77	0·00	4	51·39
6421	7·4		43	37·00	1·546	—0·003	4	40	43	58·31	3·79	0·00	4	51·00
6422	7·2		43	43·26	3·767	—	4	117	55	56·52	3·81	—	4	51·18
6424	6·8		43	57·37	3·896	—	6	122	10	6·06	3·82	—	5	50·17
6425	7·7		44	3·22	5·784	+0·026 ?	4	154	11	2·18	3·83	+0·05	3	51·13
6428	6·7		44	18·20	1·583	—0·004	3	41	24	6·29	3·85	—0·12	4	51·22
6437	7·4		45	17·78	3·741	—	4	117	4	13·82	3·94	—	4	49·90
6445	7·1		46	36·95	3·816	—	6	119	39	45·67	4·05	—	6	50·41
6446	7·0		46	45·34	3·885	—	4	121	52	29·40	4·06	—	4	50·52
6447	6·0		46	52·30	3·460	—	4	106	33	14·94	4·08	—	4	50·47
6452	5·9		48	12·88	1·349	—0·003	4	37	13	2·02	4·19	—0·22	4	51·34
6455	7·3		48	28·91	3·857	—0·004	4	121	0	59·24	4·21	+0·01	4	50·11
6459	6·8		48	43·29	3·863	—	4	121	13	37·16	4·23	—	4	50·48
6465	6·9		49	9·02	3·682	—	4	115	4	15·29	4·27	—	4	49·62
6468	6·7		49	22·51	+2·197	—	5	56	13	11·72	4·29	—	4	50·31
6469	6·2		49	29·45	—1·457	—	4	16	5	26·05	4·30	—	4	51·35
6470	5·6		49	30·22	+1·485	—0·005	5	39	28	35·75	4·30	+0·01	4	50·89
6472	7·5		49	48·60	5·747	+0·010 ?	4	153	59	21·45	4·32	0·00	4	50·57
6473	6·3		50	3·88	1·919	+0·003	4	48	35	11·58	4·35	—0·04	4	50·45
6477	6·2		51	9·58	1·040	+0·003	4	32	42	8·95	4·44	—0·02	4	51·30
6479	6·8		51	12·42	3·683	0·000	5	115	8	42·38	4·44	—0·23	4	50·15
6480	6·5		51	24·14	2·233	—	4	57	17	16·87	4·46	—	4	50·46
6481	8·9		51	42·37	5·738	— ?	2	153	57	20·59	4·48	—0·06	4	50·20
6493	6·4		53	51·94	1·961	0·000	4	49	31	25·79	4·67	—0·04	4	49·63
6495	6·4		54	8·95	2·018	—0·008	5	50	59	14·89	4·70	0·00	5	50·26
6502	6·9		55	11·45	3·625	—	4	113	6	42·79	4·78	—	4	49·61
6504	7·3		55	22·01	3·588	—	4	111	44	44·44	4·80	—	4	50·34
6505	7·4		55	33·06	3·689	—	4	115	26	49·50	4·82	—	4	50·42
6508	6·2		55	46·23	0·610	+0·012	4	27	48	20·00	4·83	+0·01	5	50·39
6512	6·8		56	18·13	+3·798	—	4	119	18	2·51	4·88	—	4	50·17
6514	7·1		56	42·58	—1·416	+0·002	3	16	6	46·96	4·91	—0·06	5	51·42
6516	7·2		56	59·97	+1·640	—0·009	4	42	10	35·05	4·94	+0·02	4	50·47
6519	6·6		57	5·89	3·439	—	4	105	52	52·34	4·95	—	4	50·48
6530	6·8		58	34·92	1·412	—0·015	4	37	57	18·99	5·07	+0·03	4	51·47
6531	7·0		58	40·25	3·699	—	5	115	55	45·15	5·08	—	5	50·94
6532	7·0		58	48·90	3·731	—	4	117	3	45·77	5·09	—	4	51·08
6534	6·1		59	14·73	2·278	0·000	4	58	28	36·35	5·13	+0·22 ?	4	50·89
6537	8·1		59	32·87	3·843	—	4	120	51	25·53	5·15	—	4	49·61
6538	7·0		59	35·40	3·682	—	4	115	18	34·91	5·16	—	4	50·98
6539	7·8		59	38·97	3·572	—	3	111	13	11·75	5·16	—	2	51·11
6540	6·9		59	40·75	3·630	0·000	3	113	25	14·23	5·16	—	3	50·78
6544	6·7		59	56·78	3·520	—	4	109	11	3·04	5·19	—	4	50·65
6549	6·9	19	0	54·43	3·823	—	4	120	14	24·65	5·27	—	5	50·61

No. from B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No of Observations	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Observations.	Mean Date of Observation.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800+
6554	7·0	19	1	48·68	+3·806	0·000	4	119	44	25·99	—5·34	—	3	49·85
6555	6·9		1	50·19	0·660	+0·013	4	28	7	49·96	5·35	—0·04	4	51·21
6565	7·2		4	38·02	3·728	—	4	117	7	14·82	5·58	—	4	50·32
6566	7·1		4	42·79	1·534	—0·011	4	39	52	33·28	5·59	+0·02	5	51·10
6567	7·3		5	1·54	2·287	—	5	58	36	27·65	5·62	—	5	50·64
6568	7·0		5	5·39	3·814	+0·022 ?	4	120	4	53·05	5·62	+0·67 ?	5	50·45
6569	7·1		5	11·64	3·796	—	4	119	29	33·79	5·63	—	3	50·60
6571	6·6		6	0·60	2·299	—	3	58	57	50·16	5·70	—	3	50·73
6574	6·0		6	10·61	2·571	—	4	68	41	40·65	5·71	—	4	50·95
6577	7·3		6	39·39	3·832	—	5	120	42	54·79	5·75	—	5	51·11
6578	7·3		7	58·41	3·692	— ?	3	115	55	18·41	5·86	—	3	50·56
6579	6·9		8	11·64	1·570	—	4	40	25	26·45	5·88	—	3	50·54
	6·9			12·43			4			18·97			1	50·44
6591	6·4		10	34·12	3·440	—	4	106	10	34·05	6·08	—	6	49·62
6593	6·8		10	44·44	1·998	—0·005	4	49	54	2·56	6·09	+0·04	4	50·35
6594	6·8		10	47·21	3·869	—	4	122	5	17·53	6·10	—	3	49·87
6602	6·0		11	22·56	2·537	—	4	67	14	27·50	6·15	—	4	50·32
6603	7·0		11	24·18	1·564	0·000	4	40	11	32·03	6·15	0·00	4	50·65
6606	7·8		11	36·72	1·716	+0·008	3	43	12	7·19	6·17	+0·07	6	50·69
6609	7·3		12	9·23	3·801	—	3	119	52	47·22	6·21	—	3	50·68
6611	7·0		12	30·20	3·702	—	4	116	26	25·26	6·24	—	4	50·46
6613	6·9		12	34·08	3·798	—	4	119	47	56·88	6·24	—	3	50·57
6624	7·2		13	56·96	2·003	—0·005	4	49	54	47·71	6·36	—0·04	4	50·61
6626	6·6		14	37·39	1·598	—0·007	4	40	42	25·01	6·42	—0·02	5	50·32
6627	7·4		15	0·48	3·834	—	4	121	4	57·05	6·45	—	4	49·62
6631	6·2		15	37·26	3·789	—	4	119	35	37·44	6·50	—	4	49·66
6635	5·9		16	17·29	1·325	+0·001	4	35	54	5·06	6·55	+0·01	4	51·31
6640	6·2		17	30·56	1·101	—0·004	4	32	38	12·76	6·65	—0·07	4	50·73
6652	6·9		18	50·25	2·613	—	4	70	1	13·57	6·76	—	3	50·01
6656	6·0		19	11·69	1·894	—0·003	4	46	54	6·14	6·79	0·00	4	50·13
6665	7·0		20	7·98	3·828	0·000	4	121	5	21·74	6·87	—	4	49·62
6672	7·8		22	5·59	3·682	0·000	5	116	2	34·53	7·03	—	5	50·01
6677	7·7		22	41·74	3·750	0·000	4	118	31	23·15	7·08	—	4	50·17
6680	6·9		22	55·75	3·827	0·000	4	121	10	47·55	7·10	0·00	4	49·64
6684	6·9		23	32·65	3·812	—	4	120	40	32·34	7·15	—	4	50·27
6685	7·4		23	41·08	3·689	0·000	4	116	20	31·56	7·16	—	4	50·24
6693	7·5		25	30·23	3·846	—	4	121	55	39·74	7·31	—	4	49·61
6711	7·5		28	22·74	2·087	+0·002	4	51	38	43·88	7·54	—0·04	4	49·74
6712	7·0		28	38·03	1·067	—0·006	4	31	48	3·78	7·57	+0·42	3	50·60
(6717)	6·5		29	33·50	1·652	—0·005	4	41	3	44·25	7·64	—0·04	4	50·17
6716	6·8		29	34·54	3·754	—	4	118	56	28·70	7·64	—	4	49·64
6718	6·1		29	47·15	1·955	—	4	47	54	48·63	7·66	—	4	50·34
6720	6·8		29	58·91	1·894	—0·010	4	46	22	54·84	7·67	—0·03	4	50·42
6721	7·0		30	23·65	1·707	—0·007	3	42	9	38·23	7·71	+0·06	3	50·34
6728	6·9		31	45·91	1·907	0·000	4	46	37	38·24	7·82	—0·03	4	50·61
6731	6·6		31	58·79	1·867	—0·017	4	45	38	4·60	7·84	+0·07	4	50·68
6737	6·6		33	9·61	0·650	+0·005	4	26	53	56·36	7·93	—0·02	4	50·65
6738	6·4		33	16·50	3·649	0·000	4	115	12	13·65	7·94	—	4	49·63
6748	6·6		35	18·29	+1·348	—	5	35	22	34·26	8·10	—	4	50·77
6752	6·7		35	53·31	—0·533	—	4	18	43	34·45	8·15	—	4	51·05
6754	5·6		36	11·95	+1·842	—0·001	4	44	49	41·70	8·17	—0·08	5	50·19

No from B A. C	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession	Proper Motion.	No. of Observations.	North Polar Distance, January 1, 1850.			Annual Precession	Proper Motion.	No. of Observations.	Mean Date of Observation.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800+
6757	6·6	19	37	12·48	+5·308	+0·034	4	151	25	35·38	—8·25	—0·05	4	50·12
6765	6·4		37	53·64	2·109	—0·004	4	51	40	59·70	8·31	—0·01	4	50·16
6768	7·0		38	30·45	3·759	—	4	119	31	26·20	8·36	—	4	49·88
6769	7·2		38	44·11	1·999	—0·011	4	48	35	3·91	8·38	—0·04	4	50·39
6780	6·1		40	18·59	1·158	—	4	32	20	23·55	8·50	—	4	50·89
6786	7·1		41	10·03	3·689	—	4	117	5	17·08	8·57	—	4	50·25
6791	6·6		41	48·55	2·829	—	4	78	41	7·67	8·62	—	4	50·38
6792	7·4		41	55·13	3·708	0·000	4	117	50	47·18	8·63	—	4	50·44
6795	7·4		42	27·37	3·697	0·000	4	117	27	29·24	8·67	—	3	50·65
6799	6·3		43	3·63	+1·755	—0·004	4	42	27	40·49	8·72	—0·01	4	50·71
6808	6·4		44	29·68	—0·052	—0·005	4	21	1	46·07	8·83	—0·02	4	50·78
6813	6·2		45	14·67	+2·123	—0·007	4	51	39	39·74	8·89	—0·11	5	50·60
6814	6·6		45	18·75	3·612	0·000	4	114	18	32·16	8·90	—	4	49·67
6815	6·2		45	27·49	3·144	—	4	93	29	54·43	8·91	—	4	50·47
6817	6·3		45	27·91	2·058	—0·008	4	49	46	46·30	8·91	+0·03	4	50·24
6818	6·9		45	34·71	1·074	+0·001	3	30	57	17·27	8·92	—0·43	4	51·16
6829	6·8		47	22·36	3·786	—	4	120	57	43·77	9·06	—	4	50·19
6830	6·6		47	41·44	1·768	—0·016	4	42	27	11·27	9·08	—0·05	4	50·48
6831	7·4		47	43·36	3·588	—	4	113	27	26·09	9·08	—	4	50·39
6834	6·8		48	2·63	0·937	—0·007	4	29	10	32·97	9·11	—0·09	4	50·78
6841	6·4		49	30·12	3·782	—	4	120	56	5·20	9·22	—	3	49·62
6844	6·7		50	0·08	4·194	0·000	4	133	26	46·28	9·26	0 00	4	50·15
6852	6·8		50	53·58	1·076	—	4	30	41	11·53	9·33	—	4	50·71
6854	7·7		51	18·91	3·726	—	4	118	59	28·39	9·36	—	4	50·70
6855	7·1		51	24·47	2·730	—	4	73	54	26·13	9·37	—	5	50·14
6857	6·8		52	0·86	2·081	—0·008	5	50	1	59·12	9·42	+0·02	6	50·27
6861	6·9		52	15·98	0·992	+0·009	4	29	34	23·43	9·44	—0·04	4	51·07
6862	6·3		52	19·69	1·009	+0·013	4	29	46	57·58	9·44	+0·03	4	51·07
6863	6·4		52	23·11	1·194	0·000	4	32	8	42·02	9·45	+0·08	4	50·65
6865	6 8		52	38·46	1·641	—0·007	4	39	29	55 78	9·47	—0·04	4	50·59
6876	6 3		54	37·45	1·882	0·000	4	44	38	6·02	9·62	0·00	5	50·02
6887	7·2		56	1·18	3·732	—	4	119	29	42·54	9·72	—	4	49·62
6888	7·7		56	2·88	3·672	0·000	4	117	13	56·56	9·73	—	5	49·73
6899	7·3		58	3·81	3·747	—	4	120	8	54·15	9·88	—	4	49·70
6904	7·0		59	38 29	4·203	—	4	134	19	34·06	10·00	—	2	50·11
6906	7·1		59	58·60	3·652	—	4	116	39	10·44	10·03	—	5	49·98
6908	7·3	20	0	3 63	3·709	—	5	118	52	14·89	10·03	—	6	50·40
6918	6·6		1	2·40	1·623	+0·006	4	38	35	20·32	10·11	—0·09	4	50·74
6919	6·9		1	4·00	5·424	+0·005	8	153	51	32·32	10·11	—0·08	9	50·11
6920	7·1		1	4·33	3·627	0·000	4	115	43	7·88	10·11	—	4	49·61
6928	6·7		2	16·41	1·558	+0·020	4	37	16	33·44	10·20	—0·27	4	50·76
6930	6·5		2	50·82	0·769	+0·006	4	26	32	25 60	10·24	—0·12	4	51·21
6941	6·6		4	27·09	2·638	—	4	69	18	31 67	10·36	—	4	49·68
(6946)	7·2		5	44·68	5·249	—	3	152	21	37·67	10·46	—	4	50·53
6945	6·7		5	46·46	5·377	+0·035 ?	4	153	41	0·11	10·46	—0·06	3	50·39
6948	6·3		6	31·52	3·740	0·000	4	120	27	28·57	10·52	0·00	4	49·61
6954	7·5		7	57·92	4·140	—	4	133	18	57·44	10·62	—	5	49·72
6959	6·5		8	21·14	1·671	0·000	4	38	59	9·20	10·65	—0·02	4	51·08
6960	7·6		8	29·92	4·203	—	4	134	59	6·09	10·66	—	4	49·76
6961	6·4		8	30·00	4·330	+0 040	3	138	1	59·24	10·66	+0·18	4	50·70

No. from B. A. C.	Magnitude.	Right Ascension, January 1, 1850. h.	m.	s.	Annual Precession. s.	Proper Motion. s.	No. of Observations.	North Polar Distance, January 1, 1850. °	′	″	Annual Precession. ″	Proper Motion. ″	No. of Observations.	Mean Date of Observation. 1800+
6963	6·7	20	8	39·46	+2·018	—0·009	4	47	4	25·49	—10·68	+0·02	5	49·17
6966	5 6		8	54·22	2·540	—	4	64	51	47·68	10·70	—	5	50·72
6977	7·7		10	7·13	3·724	0·000	4	120	5	13·26	10·78	—	3	50·34
6982	7·1		10	46·51	3·612	—	4	115	41	14·07	10·83	—	4	50·49
6984	{7·4, 7·1}		11	{12·26, 13·40}	3·711	— ?	{4, 4}	119	39	{29·31, 50·45}	10·86	—	{1, 4}	50·76
6985	6·8		11	21·38	1·743	+0·002	4	40	13	37·90	10·88	—0·04	4	50·52
6986	6·0		11	34·66	2·132	—0·003	4	50	5	48·62	10·89	—0·01	4	50·79
6988	7·2		12	9·44	3·092	—	4	91	6	43·58	10·93	—	3	50·74
6996	6·9		12	47·82	2·123	—0·007	4	49	43	59·04	10·98	—0·02	3	50·91
7001	6·6		13	29·83	2·181	—0·004	3	51	27	47·51	11·03	—0·01	4	50·81
7003	7·7		13	51·48	4·079	—	1	132	8	47·25	11·05	—	2	50·68
7006	6·8		14	11·38	2·241	—	4	53	20	14·50	11·08	—	5	50·56
7008	6·9		14	48·86	2·172	0·000	4	51	4	2·67	11·13	—0·01	5	50·67
7011	6·6		15	29·80	3·700	—	6	119	33	18·15	11·18	—	4	49·64
7012	7·4		15	35·58	3·619	—	4	116	18	43·87	11·19	—	4	49·75
7014	6·2		15	44·43	2·976	—	4	85	7	56·54	11·20	—	3	50·46
7017	6·1		16	1·50	0·537	+0·092	4	28	37	40·05	11·21	—0·33	4	50·95
7021	7·7		16	44·95	3·635	—	4	117	2	20·31	11·27	—	4	49·70
7026	7·0		17	20·43	3·697	—	4	119	33	26·10	11·31	—	4	49·75
7027	6·7		17	25·49	2·126	—0·007	4	49	27	4·08	11·32	—0·01	3	50·31
7030	7·4		18	17·78	3·688	—	4	119	18	6·11	11·38	—	4	50·44
7032	7·4		18	46·38	3·674	—	4	118	45	1·97	11·41	—	5	50·65
7033	7·2		18	53·00	3·701	—	4	119	51	45·09	11·42	—	4	50·46
7034	7·0		19	1·64	3·609	—	4	116	5	48·52	11·43	—	4	49·76
7035	6·9		19	8·42	1·549	+0·004	5	35	48	33·32	11·44	0·00	4	51·24
7037	6·4		19	24·43	0·300	+0·015	3	21	35	57·67	11·46	—0·07	4	51·22
7039	7·4		19	34·57	3·574	0·000	4	114	39	0·37	11·47	—	4	50·51
7040	6·9		19	50·66	3·569	0·000	4	114	28	24·03	11·49	—	3	50·34
7041	7·0		20	12·48	2·081	—	4	47	53	2·15	11·52	—	4	50·75
7048	7·1		20	39·61	2·156	0·000	3	50	5	15·73	11·55	0·00	3	50·72
7055	7·0		21	38·80	1·560	0·000	4	35	47	55·82	11·62	—0·59	3	51·36
7056	8·1		21	41·13	5·287	—0·009	4	153	48	51·58	11·62	+0·17	4	49·76
7057	6·2		21	45·39	3·689	—	4	119	36	37·56	11·63	—	5	49·65
7060	6·4		21	57·76	1·251	—0·006	4	30	53	20·33	11·64	—0·04	5	51·13
7063	6·3		22	39·97	3·373	—	4	105	33	13·46	11·70	—	4	49·76
7064	6·7		22	45·57	1·452	—0·004	4	33	51	16·41	11·70	—0·02	3	51·04
7071	8·1		23	33·24	3·674	—	5	119	5	54·12	11·76	—	4	49·72
7074	6·7		23	40·04	5·255	—0·017	4	153	37	35·72	11·76	+0·13	4	50·40
7082	5·7		24	58·49	5·102	+0·041	5	152	2	18·68	11·86	—0·24	2	50·34
7083	6·8		25	1·66	1·977	+0·009	4	44	34	44·04	11·86	—0·20	5	50·53
7086	6·9		25	41·67	1·502	—	4	34	26	1·80	11·91	—	4	50·80
7092	7·1		26	47·65	5·090	—	4	152	3	7·77	11·98	—	4	50·45
7093	7·1		26	52·18	3·624	—	4	117	17	13·18	11·99	—	4	49·61
7095	6·9		26	59·56	5·212	—	4	153	25	21·99	12·00	—	4	49·76
7100	7·2		27	38·74	2·085	—0·007	4	47	19	3·86	12·05	—0·02	4	50·39
7101	7·1		27	39·16	2·148	—0·004	5	49	2	13·01	12·05	—0·07	5	49·78
7104	7·0		28	5·67	4·139	+0·030 ?	4	135	2	30·29	12·08	—	5	49·94
7108	6·6		28	56·29	3·581	—	4	115	37	35·90	12·13	—	4	50·44
7111	7·5		28	57·17	3·521	0·000	4	112	57	41·14	12·14	—	4	50·11
7112	6·1		28	59·70	1·962	—0·003	4	43	49	8·04	12·14	—0·01	3	50·68

No from B. A. C.	Magnitude.	Right Ascension, January 1, 1850			Annual Precession	Proper Motion.	No of Obser-vations.	North Polar Distance, January 1, 1850			Annual Precession.	Proper Motion.	No of Obser-vations.	Mean Date of Observa-tion.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800 +
(7114)	6·9	20	29	11·33	+2·160	—0·005	4	49	24	58·63	—12·15	—0·02	3	50·76
7118	7·2		29	11·77	3·561	0·000	4	114	44	49·43	12·15	—	4	50·45
7119	6·6		29	56·65	2·136	0·000	4	48	37	35·31	12·21	—0·05	3	50·70
7123	7·0		30	35·09	3·396	+0·049	4	107	4	51·25	12·25	+0·14	4	50·68
7128	7·0		31	15·94	3·548	+0·043 ?	4	114	19	3·88	12·29	—	4	50·67
7133	7·5		31	28·96	3·554	—	4	114	37	53·71	12·31	—	4	50·60
7135	7·3		31	32·48	3·634	—	4	118	6	45·81	12·31	—	4	50·78
7136	6·8		31	36·00	3.612	—	4	117	10	11·67	12·32	—	4	51·08
7139	6·5		31	45·90	3·657	—	4	119	4	33·24	12·33	—	4	51·07
7142	7·4		31	59·80	4·140	—?	4	135	24	50·12	12·35	—	4	51·09
7147	6·7		32	27·90	3·596	—	3	116	31	36·97	12·38	—	5	51·00
7148	8·0		32	28·99	3·642	—	4	118	31	23·09	12·38	—	4	51·23
7150	6·6		32	40·51	2·872	—	4	79	16	49·05	12·40	—	4	50·77
7153	6·8		32	56·87	1·705	—0·007	4	37	32	56·60	12·41	0·00	4	51·37
7157	6·8		33	36·19	2·788	—	4	74	53	13·64	12·46	—	4	50·28
7158	6·6		34	3·78	2·191	—0·002	4	49	56	53·85	12·49	—0·02	4	50·63
7161	7·1		34	19·32	2·020	—	4	44	51	40·10	12·51	—	4	49·75
7162	7·5		34	41·35	3·514	0·000	4	112	59	15·06	12·53	—	4	49·70
7166	7·0		35	6·84	1·555	—0·002	4	34	31	20·35	12·56	+0·04	4	51·25
7167	6·7		35	23·44	2·241	0·000	4	51	26	59·10	12·58	0·00	4	50·69
7168	7·1		35	30·97	3·641	—	4	118	44	28·00	12·59	—	4	50 53
7170	6·9		36	12·48	3·618	0·000	4	117	47	13·01	12·64	—	4	50·53
7172	6·8		36	20·56	3·151	0·000	5	94	27	11·48	12·64	—	3	50·86
7174	6·3		36	31·10	2·163	—0·004	4	48	49	4·95	12·66	—0·02	4	50·76
(7163)	7·7		36	51·37	4·850	—	4	149	46	39·87	12·68	—	5	50·56
7176	6·5		37	6·17	1·281	—0·004	4	30	2	8·86	12·70	—0·18	3	51·39
7180	8·0		37	28·10	3·537	0·000	3	114	15	57·07	12·72	— ?	4	51·20
7181	7·1		37	28·53	3·607	0·000	4	117	24	36·85	12·72	0·00	4	50·86
7183	6·9		37	46·31	3·502	—	4	112	42	18·01	12·74	—	4	49·79
7187	7·1		38	22·84	3·595	—	4	116	57	35·40	12·78	—	3	50·72
7193	6·4		39	26·91	1·289	—0·003	4	29	56	15·85	12·85	+0·01	4	51·24
7198	6·7		39	38·57	1·980	—0·009	4	43	14	43·49	12·87	—0·03	4	49·76
7210	7·1		41	5·66	3·611	+0·007	4	117	55	7·24	12·96	+0·08	4	49·74
7216	7·1		41	39·69	3·557	0·000	4	115	31	54·41	13·00	—	4	49·41
7218	6·9		41	59·70	1·748	—0·018	5	37	32	56·83	13·03	+0·16	5	50·81
7219	6·8		42	11·80	2·054	0·000	4	44	58	9·00	13·04	—0·02	4	49·78
7224	6·9		42	34·77	3·623	—	4	118	33	6·06	13·06	—	4	50·00
7225	7·1		42	35·05	3·606	+0·004	5	117	47	59·72	13·06	+0·08	4	50·48
7240	8·4		44	35·28	4·803	—	4	149	50	17·17	13·20	—	5	49·71
7243	7·1		44	53·36	1·863	0·000	4	39	46	22·26	13 22	—0·03	4	50·75
7244	7·2		45	12·61	3·536	0·000	4	114	50	33·56	13·24	—	3	50·37
7245	7·0		45	38·39	4·078	+0·033 ?	3	135	8	30·38	13·27	—0 05	4	49·75
7248	6·8		46	14·47	3·422	—	3	109	21	33 62	13·30	—	4	49 61
7253	5·2		47	56·29	2·117	0·000	4	46	10	43·51	13·42	0·00	4	49·78
7254	6·3		48	3·73	2·091	0·000	4	45	23	2·80	13·42	—0·06	4	50·40
7259	8·0		48	34·46	2·119	+0·006	3	46	10	52·23	13·46	—0·05	3	49·82
7260	7·0		48	46 06	2·235	—0·003	4	49	51	56·05	13·47	—0·01	3	50·36
7268	6·8		50	45·61	2·021	—	4	43	9	18·50	13·60	—	5	49·72
7273	6·1		51	17·09	2·112	—0·008	4	45	38	58·98	13·63	—0·05	4	49·80
7274	6·4		51	31·05	1·958	—	4	41	22	46·12	13·65	0·00	5	49·75

No. from B. A. C	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Observations.	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion.	No of Observations	Mean Date of Observation.
		h.	m.	s.	s.	s		°	′	″	″	″		1800+
7278	6·8	20	51	39·67	+1·897	+0·010	5	39	50	45·38	—13 66	—0·02	4	50·68
7290	6·4		52	56·99	2·134	—	3	46	6	37·45	13·74	—	3	50·62
7295	7·0		53	47·89	4·170	—	4	138	32	53·70	13·79	—	4	49·65
7297	6·9		54	11·29	2·267	+0·018	4	50	19	58·61	13·82	—0·22	4	49·78
7307	6·1		56	1·26	5·090	— ?	4	154	31	30·79	13·93	+0·10	4	49·78
7317	6·7		57	2·51	2·139	0·000	4	45	47	55·38	14·00	0·00	4	49·70
7327	6·8		58	21·01	3·490	—	6	113	44	50·00	14·08	—	5	49·72
7332	6·5		59	12·45	1·826	+0·004	4	37	18	34·80	14·13	—0·03	4	50·40
7340	7·2	21	0	29·96	3·495	—	4	114	13	48·61	14·21	—	4	49·76
7341	7·2		0	41·69	4·319	0·000	4	142	56	47·49	14·22	—	4	49·77
7347	7·1		1	51·88	3·469	—0·100 ?	5	113	5	5·15	14·31	—	5	50·42
7348	7·1		2	34·58	4·436	+0·010	4	145	35	57·41	14·34	— ?	4	50·22
7359	7·0		4	33·93	3·512	0·000	4	115	27	27·50	14·46	0·00	4	49·78
7363	6·5		5	27·12	0·417	—0·029	5	19	10	9·71	14·52	+0·12	5	50·91
7366	8·0		5	57·91	3·530	—	5	116	30	10·48	14·55	—	4	49·69
7369	6·9		6	45·82	4·792	—	4	151	57	26·29	14·59	—	4	49·78
7402	5·5		12	51·49	2·231	—0·007	4	46	41	0·52	14·95	+0·02	4	49·62
7410	5·7		14	17·12	2·691	—	4	66	46	25·39	15·04	—	4	49·74
7411	6·1		14	18·92	2·058	0·000	4	41	7	19·80	15·04	—0·04	4	49·75
7417	6·3		15	6·03	1·660	—	4	32	0	34·48	15·08	—	3	49·84
7430	6·9		16	41·88	1·549	—	4	29	52	45·59	15·18	—	4	50·41
7431	6·1		16	47·43	2·075	—0·005	4	41	15	7·53	15·18	—0·11	4	49·76
7436	6·8		17	10·32	3·467	0·000	4	114	27	52·35	15·20	0·00	4	49·68
7448	7·2		18	56·34	2·003	+0·004	4	38	59	10·27	15·30	0·00	4	50·72
7450	6·3		19	28·47	2·778	0·000	4	71	16	18·32	15·33	+0·06	4	49·79
7452	8·0		19	40·43	4·204	—	4	142	47	4·93	15·34	—	3	49·78
7466	7·3		21	45·89	3·483	+0·007	4	115	50	45·94	15·46	+0·02	4	49·66
7472	6·9		22	53·03	4·210	+0·020	4	143	23	45·27	15·52	+0·20	3	49·69
7477	7·6		23	33·69	2·265	—0·010	4	46	19	0·04	15·56	+0·01	4	49·75
7483	6·3		25	20·49	1·990	+0·005	4	37	42	0·92	15·66	—0·02	3	49·81
7488	7·2		26	12·89	2·024	—0·006	4	38	27	59·27	15·71	—0·08	4	50·41
7489	6·8		26	24·84	2·009	—0·004	4	38	2	25·64	15·72	—0·02	5	50·53
7495	6·4		26	51·82	1·647	—0·005	4	30	12	3·97	15·74	0·00	4	50·70
7496	6·5		26	52·31	2·158	—	4	42	13	2·13	15·74	—	4	49·77
7497	6·9		27	4·91	3·054	—	4	88	50	5·83	15·75	—	4	49·68
7501	6·3		27	40·59	2·241	—	4	44	48	34·09	15·79	—	4	49·81
7508	7·2		29	2·05	0·802	+0·011	4	19	50	25·75	15·86	+0·08	4	50·48
7512	6·7		29	17·36	2·060	—0·003	4	38	58	6·04	15·87	—0·02	3	49·79
7515	6·2		29	51·49	3·086	0·000	4	91	3	35·73	15·90	—	4	49·71
7523	7·4		30	22·18	3·451	0·000	4	115	7	15·63	15·93	—	4	49·76
7531	7·7		32	50·45	4·629	— ?	4	152	47	38·20	16·06	0·00	4	49·73
7548	7·1		34	46·26	2·160	—0·002	3	40	59	46·28	16·16	—0·02	4	49·73
7549	7·6		34	47·15	3·437	—	4	114	49	23·41	16·16	—	4	49·69
7552	7·9		34	54·51	4·639	+0·026	4	153	14	2·37	16·17	+0·40	4	50·18
7555	6·6		35	44·95	1·980	—	4	35	48	30·17	16·21	—	4	50·22
7564	7·2		37	2·83	0·849	0·000	6	19	22	6·36	16·28	+0·08	4	50·88
7589	7·2		39	55·47	2·103	—0·006	4	38	25	18·68	16·42	—0·02	4	50·60
7590	6·7		39	56·56	2·843	—	4	73	29	47·16	16·43	—	4	49·75
7593	6·6		40	19·12	2·373	—	4	47	37	49·80	16·44	—	4	49·75
7594	7·9		40	57·41	4·551	— ?	4	152	44	46·06	16·47	+0·20	4	49·71

No from B. A. C	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Obser-vations.	North Polar Distance, January 1, 1850.			Annual Precession	Proper Motion.	No. of Obser-vations.	Mean Date of Observa-tion.
		h.	m.	s	s.	s.		°	′	″	″	″		1800 +
7602	7·1	21	42	6·12	+2·474	0·000	4	51	44	18·69	—16·53	—0·06	4	49·85
7609	6·3		44	4·92	4·512	— ?	4	152	35	9·26	16·63	—0·04	4	49·65
7610	6·8		44	21·30	1·080	+0·003	3	20	32	38·40	16·64	+0·02	2	50·49
7611	6·8		44	28·00	1·510	+0·006	4	25	31	37·34	16·65	—0·03	4	50·74
7612	6·9		44	43·29	2·118	—0·006	4	38	0	6·72	16·66	+0·02	4	50·24
7614	6·6		44	52·66	2·472	0·000	4	51	9	50·10	16·67	—0·05	4	49·83
7617	7·6		44	59·01	3·219	—	4	101	15	47·29	16·67	—	4	49·66
7620	6·7		45	34·72	3·215	—	4	101	0	54·16	16·70	—	4	49·68
7621	6·8		45	38·78	1·402	+0·004	5	23	54	16·87	16·71	+0·05	5	50·74
7624	8·1		45	53·31	4·492	—0·011	4	152	33	6·43	16·72	+0·07	4	49·68
7631	6·2		46	56·26	2·021	— ?	4	34	54	25·47	16·77	—0·02	4	50·22
7646	6·9		50	13·50	2·135	+0·004	4	37	28	0·25	16·93	—0·05	4	49·86
7651	6·4		50	50·74	1·791	—0·010	4	29	10	7·85	16·95	—0·01	4	50·38
7652	7·3		50	51·53	3·382	0·000	4	113	35	12·71	16·95	—	4	49·74
7653	7·6		50	58·64	3·456	—	4	118	20	41·26	16·96	—	4	49·69
7667	8·2		54	23·11	4·144	—0·048	4	147	1	15·72	17·12	—	4	49·73
7677	6·5		56	22·71	0·631	—0·002	4	15	43	16·24	17·21	—0·04	4	49·70
7679	7·1		56	34·89	2·451	0·000	4	47	54	29·68	17·22	—0·04	4	49·76
7681	5·0		56	53·62	2·412	+0·003	4	46	4	17·64	17·23	—0·02	2	49·85
7695	7·0		59	0·29	2·361	+0·015	4	43	29	36·25	17·32	—0·10	4	50·28
7697	7·1		59	18·68	3·203	0·000	4	101	10	33·30	17·34	0·00	4	49·68
7699	6·5		59	23·06	1·786	+0·004	3	27	36	14·52	17·34	—0·48	5	50·76
7703	6·9		59	47·61	3·198	—	4	100	48	26·68	17·36	—	4	49·84
7709	7·0	22	0	42·35	3·237	—	4	104	1	54·91	17·40	—	4	50·67
7717	6·8		1	34·79	3·167	—	4	98	15	45·90	17·44	—	4	49·79
7727	6·8		2	44·99	2·364	0·000	4	42	47	55·66	17·49	—0·02	4	49·83
7734	8·0		3	30·14	3·840	—0·025	4	139	47	30·86	17·52	— ?	5	49·72
7743	7·2		4	49·58	2·485	—0·004	4	47	42	21·05	17·58	—0·01	4	49·69
7746	6·1		5	20·06	2·304	+0·004	4	39	54	58·38	17·60	—0·05	4	49·86
7754	5·8		6	23·96	2·125	+0·019	4	33	54	18·65	17·64	—0·18	4	49·81
7759	5·9		7	4·11	1·974	—	5	29	58	52·17	17·67	—	5	49·85
7760	6·6		7	12·50	1·391	—0·004	4	20	36	26·02	17·68	—0·09	4	50·42
7769	6·5		8	24·02	3·943	+0·050 ?	4	144	20	47·17	17·72	—	5	49·65
7770	6·6		8	26·22	2·503	0·000	4	47	47	18·78	17·73	0·00	4	49·78
7780	7·6		10	35·26	4·064	0·000	4	148	15	34·64	17·81	—	4	49·67
7786	7·7		12	46·99	1·755	—0·006	3	24	37	15·81	17·90	+0·01	4	50·55
7787	7·1		12	50·25	2·302	—0·002	4	38	5	39·11	17·90	—0·02	4	49·72
7797	7·8		14	12·25	3·719	—	4	137	25	28·89	17·96	—	4	49·63
7803	7·3		15	38·22	2·523	—0·008	4	47	0	33·22	18·01	+0·02	4	50·16
7810	7·0		17	16·91	1·772	+0·010	4	24	3	1·91	18·07	—0·02	4	50·82
7812	6·6		17	28·46	2·196	+0·004	4	33	28	22·16	18·08	0·00	4	50·76
7822	7·2		18	51·37	4·094	+0·042 ?	4	150	49	1·12	18·13	—	5	50·33
7834	7·3		21	43·84	3·624	+0·013 ?	4	134	51	37·31	18·24	0·00 ?	4	50·45
7841	5·0		22	48·91	4·139	— ?	4	152	44	59·40	18·28	—	3	49·77
7846	6·6		23	30·15	2·333	+0·004	5	36	31	14·30	18·30	0·00	4	49·86
7858	6·5		25	48·62	2·638	0·000	4	50	59	24·69	18·39	0·00	4	49·76
7866	5·7		27	21·22	3·313	—	4	114	45	51·67	18·44	—	4	49·69
7875	6·7		28	30·27	2·133	—0·015	4	28	59	45·83	18·48	—0·04	4	49·84
7876	6·4		28	42·07	1·710	+0·021	5	20	51	42·50	18·49	—0·16	5	49·86
(7878)	6·4		29	2·47	1·681	+0·013	5	20	23	59·99	18·50	—0·08	4	49·89

No. from B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession.	Proper Motion.	No of Obser-vations.	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion.	No. of Obser-vations	Mean Date of Observa-tion.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800+
7877	8·1	22	29	3·23	+3·634	— ?	4	137	29	0·80	—18·50	— ?	3	49·68
7882	6·9		29	39·55	2·474	—0·008	5	40	42	17·23	18·52	—0·04	4	49·78
7892	8·3		31	34·81	3·190	—	4	103	23	15·18	18·58	—	4	49·67
7907	6·7		33	59·11	1·292	+0·018	4	15	24	28·77	18·66	—0·05	4	50·75
7910	6·8		34	31·82	3·960	+0·042 ?	4	151	17	4·09	18·67	—	5	49·80
7917	6·1		34	53·95	2·652	+0·006	4	49	14	9·27	18·69	—0·08	4	49·80
7931	6·0		37	19·17	2·693	0·000	4	51	19	8·99	18·76	0·00	4	49·70
7939	7·2		38	35·39	3·963	—	4	152	28	22·46	18·80	—	3	49·76
7948	6·0		39	31·20	2·630	+0·010	4	46	14	38·11	18·83	—0·02	4	49·69
7953	6·6		41	26·09	2·360	+0·007	5	32	18	27·46	18·89	0·00	5	49·84
7956	6·6		42	22·87	3·981	—0·006	4	153	58	49·92	18·92	0·00	5	49·77
7961	6·2		43	35·27	2·443	+0·015	5	34	53	30·90	18·95	—0·01	4	50·21
7963	6·7, 6·7		43	54·40, 54·65	2·004	— ?	4, 4	22	13	29·80	18·96	—0·13 ?	4	49·86
7964	7·5		43	56·11	2·969	0·000	4	76	49	55·45	18·96	0·00	4	49·78
7968	6·7		44	31·59	3·518	—	4	135	56	34·71	18·98	—	4	49·73
7977	6·6		46	12·64	3·063	0·000	4	88	57	10·04	19·02	—	4	49·80
7978	6·8		46	20·39	2·724	0·000	3	50	37	42·38	19·03	—0·02	4	49·79
7983	6·2		46	57·68	2·667	—0·011	4	46	2	49·82	19·05	—0·03	4	49·78
7984	6·5		47	14·51	2·726	+0·007	2	50	25	19·04	19·05	—0·03	3	49·89
7989	7·9		47	51·79	3·738	—	4	148	11	54·14	19·07	—	6	50·45
7991	5·9		48	1·80	3·541	—0·038	3	138	46	6·42	19·08	—	3	49·80
7995	5·9		49	51·93	2·608	0·000	4	41	3	58·95	19·12	0·00	4	49·81
7996	6·1		49	54·48	3·049	—	4	86	59	29·08	19·12	0·00	4	49·65
7999	6·3		50	27·33	2·629	0·000	4	42	6	59·64	19·14	—	4	50·25
8000	7·0		50	36·56	3·483	— ?	3	135	59	29·20	19·14	—	3	50·44
8001	6·9		50	58·73	3·011	—	4	81	26	18·65	19·15	—	4	49·78
8011	8·8		52	40·63	3·904	— ?	4	155	6	2·01	19·20	—0·17	3	49·80
8013	5·9		53	1·08	2·429	+0·004	3	30	59	16·28	19·20	—0·03	3	49·86
8015	6·8		53	6·88	1·863	0·000	3	17	40	4·42	19·21	+0·02	3	50·42
8018	7·2		53	52·31	3·466	— ?	4	136	6	31·73	19·23	—	4	49·77
8029	5·9		55	46·22	3·594	—	4	144	46	4·03	19·27	—	4	49·72
8056	7·2	23	0	26·62	2·724	+0·003	3	44	44	32·31	19·38	+0·02	3	49·71
8068	6·1		1	52·81	2·400	—0·003	6	26	35	18·22	19·41	—0·04	7	49·81
8077	6·7		4	1·10	2·330	+0·006	4	23	34	18·58	19·46	—0·02	4	49·76
8086	8·2		6	35·91	3·617	—0·033 ?	4	150	30	36·21	19·51	—	4	49·71
8091	7·5		7	38·66	2·915	0·000	4	62	44	41·13	19·53	—	4	49·69
8096	6·4		8	17·88	3·373	+0·020 ?	4	135	18	23·71	19·55	—	4	49·75
8101	7·5		9	5·26	3·621	+0·023 ?	4	151	49	4·66	19·56	—	3	49·79
8104	6·3		9	18·36	2·085	+0·040	5	16	35	9·40	19·57	—0·02	5	50·19
8106	6·4		9	51·85	2·270	+0·011	4	19	55	45·39	19·58	—0·02	5	49·89
8107	6·1		9	52·56	2·694	+0·006	4	37	35	40·30	19·58	+0·25	4	49·85
8110	7·1		10	13·87	2·789	0·000	4	45	39	4·29	19·58	+0·03	4	49·75
8115	6·2		10	54·00	2·790	—0·007	4	45	19	45·15	19·60	0·00	4	49·79
8120	7·2		11	58·71	2·799	0·000	4	45	40	56·31	19·62	0·00	3	49·71
8122	7·4		12	27·39	2·177	—0·010	4	17	7	50 68	19·63	+0·07	4	50·81
8123	6·4		12	29·31	3·093	—	4	94	44	5·36	19·63	—	4	49·73
8130	7·5		13	9·71	3·349	—	4	135	43	45·99	19·64	—	4	49·86
8134	6·8		13	37·70	3·096	0·000	4	95	29	33·61	19·65	0·00	3	49·77
8135	6·4		13	38·55	2·818	0·000	4	46	42	12·19	19·65	—	4	50·02
8139	7·5		14	5·20	2·865	—	5	52	14	17·09	19·65	—	4	49·93

No. from B. A. C.	Magnitude.	Right Ascension, January 1, 1850.			Annual Precession	Proper Motion.	No. of Observations.	North Polar Distance, January 1, 1850.			Annual Precession.	Proper Motion	No. of Observations.	Mean Date of Observation.
		h.	m.	s.	s.	s.		°	′	″	″	″		1800+
8140	7·0	23	14	10·95	+3·547	+0·010	4	150	52	38·32	−19·66	−0·16	4	50·76
8147	6·9		15	17·31	2·978	+0·025	3	70	15	45·28	19·67	—	3	49·80
8153	6·5		15	51·60	2·640	−0·010	3	30	41	18·18	19·68	0·00	5	49·72
8158	6·7		17	19·56	2·694	+0·008	4	33	17	13·53	19·71	−0·05	7	49·84
8164	7·5		18	23·02	3·478	— ?	4	149	14	44·17	19·72	— ?	3	49·78
8165	7·2		18	24·91	3·556	−0·008	4	153	33	41·46	19·73	+0·02	4	49·75
8166	6·1		18	39·98	3·475	+0·024	5	149	18	11·36	19·73	−0·22	4	49·76
8173	6·8		19	59·34	2·437	+0·012	4	20	8	25·19	19·75	−0·07	4	49·73
8176	6·2		20	17·86	3·542	0·000	4	153	56	6·34	19·76	−0·11	4	49·74
8181	6·7		21	4·21	3·376	+0·020	5	143	30	16·32	19·77	— ?	4	49·74
8187	6·6		23	6·12	2·303	−0·027	4	15	36	2·76	19·80	+0·08	4	49·79
8191	8·7		23	37·38	3·434	—	4	149	49	48·84	19·80	—	4	49·76
8207	7·3		26	37·06	3·497	+0·012	4	155	31	5·10	19·84	−0·29	4	49·78
8226	7·1		30	17·83	3·421	+0·010 ?	4	153	42	54·80	19·89	−0·11	4	49·75
8235	7·9		32	40·09	3·318	+0·030 ?	4	147	14	59·12	19·91	0·00 ?	4	49·72
8244	8·1		34	25·49	3·317	—	4	148	47	34·31	19·93	—	3	49·72
8245	6·6		34	52·34	2·929	0·000	4	45	50	20·05	19·93	−0·02	4	49·76
8247	7·0		34	56·08	3·024	—	4	72	9	49·81	19·94	—	4	49·70
8253	6·5		35	54·26	3·375	−0·029 ?	4	155	14	15·11	19·94	−0·26	3	49·79
8254	6·5		35	58·31	3·215	—	4	135	54	55·06	19·94	—	4	49·79
8260	8·2		38	35·11	3·186	— ?	4	132	22	44·73	19·97	—	3	49·71
8269	7·1		40	4·94	3·064	0·000	4	86	36	9·91	19·98	0·00	4	49·76
8270	7·2		40	8·95	3·064	—	4	86	39	23·03	19·98	—	2	49·86
8272	6·6		40	32·83	3·056	0·000	4	82	35	11·11	19·98	—	4	49·78
8278	7·2		41	38·65	3·288	— ?	3	153	40	18·07	19·99	0·00	3	49·79
8282	6·2		41	50·64	2·900	+0·003	4	31	52	11·04	19·99	+0·01	4	49·78
8283	7·9		41	54·97	3·269	—	4	151	58	10·42	19·99	—	4	49·76
8287	6·9		42	48·60	3·109	—	3	111	3	58·31	20·00	—	4	49·77
8294	6·8		43	52·99	3·154	— ?	4	131	39	33·64	20·01	—	4	49·75
8306	8·0		45	47·45	3·170	+0·011 ?	5	140	16	0·68	20·02	— ?	3	49·82
8315	7·0		47	57·56	3·062	0·000	3	82	36	39·90	20·03	—	4	49·66
8320	6·7		49	25·97	3·196	—	4	153	47	32·17	20·03	—	3	49·74
8325	7·4		50	31·76	3·183	— ?	4	153	50	24·97	20·04	—	4	49·74
8340	7·1		53	34·06	3·105	— ?	5	132	19	17·18	20·05	—	5	49·80
8345	6·5		54	4·22	3·040	0·000	4	48	28	4·85	20·05	+0·03	4	49·66
8347	7·6		54	12·66	3·102	—	3	132	26	53·75	20·05	—	4	49·72
8360	5·7		56	38·60	3·077	—	4	107	21	43·12	20·05	—	4	49·70
8366	6·2		57	22·66	3·044	0·000	4	29	31	16·69	20·05	−0·04	4	49·84
8371	7·0		58	12·23	3·080	— ?	5	132	35	4·92	20·06	0·00 ?	4	50·00
8376	8·4		59	45·14	3·072	—	4	131	18	54·39	20·06	—	4	49·90

GREAT TRIGONOMETRICAL SURVEY OF INDIA 1869.

NOTES ON THE FOREGOING CATALOGUE.

In the following Notes B. refers to Brisbane's Catalogue of 7385 Stars; G. to Groombridge's Catalogue of Circumpolar Stars; B.A.C. to the Catalogue of the British Association; L.C. to Lacaille's Catalogue of 9766 Stars as reduced by Baily;—P.M. means proper motion.

No. 13 Another star of 7 magnitude precedes by $88^{s}\cdot3$ & $10''\cdot$ S.

15 The A.R. differs from Lacaille by — $6^{s}\cdot3$.

34 Comparison with B. reverses the P.M.

41 The P.M. is not confirmed either in A.R. or P.D.

76 The P.M. in A.R. is probably underrated, as the difference from Lacaille is — $1^{s}\cdot8$: that in P.D. if any, is —.

98 The proper motion is not confirmed either in A.R. or P.D.

157 The P.M. appears to be much overrated both in A.R. and P.D., the differences from Brisbane being + $0^{s}\cdot46$ and — $10''\cdot49$ respectively; there must be some error in Lacaille.

186 Is not found.

188 The P.M. in P.D. is not confirmed, that in A.R. is if any thing +, the difference from Brisbane being + $0^{s}\cdot5$ but he has only one observation.

193 Lacaille is probably in error.

276 The P.M. in A.R. is almost exactly confirmed, while that in P.D. is — instead of +.

277 The P.M. is not confirmed.

278 Not seen.

294 The P.M. in P.D. is confirmed, or is probably greater than that assigned in the B.A.C., that in A.R. appears + instead of —, but its amount is uncertain as B. has but one observation with the mural; difference from B. + $1^{s}\cdot09$; from L.C. + $0^{s}\cdot7$.

306 The P.M. in A.R. appears underrated, that in P.D. is not confirmed.

407 The P.M. in A.R. not confirmed; that in P.D. rather overrated.

417 The P.M. in A.R. is nearly confirmed, that in P.D. if any is + instead of —; difference from B + $0''\cdot9$.

434 Not seen.

450 Another star 7 magnitude precedes by $27^{s}\cdot6$, and $95''\cdot5$ N.

455 The P.M. in A.R. appears underrated.

514 The P.M. not confirmed.

531 The P.M. in A.R. nearly confirmed, that in P.D. reversed.

534 Not seen.

543 P.M. not confirmed; diff. from B. — $0^{s}\cdot38$ and + $0''\cdot7$, from L.C. + $2^{s}\cdot0$.

575 The P.M. in P.D. appears underrated.

596 Observed by mistake for 601 which was not found; the P.M. in P.D. is nearly confirmed; that in A.R. appears underrated in B.A.C.

602 Differs from L.C. by + $3^{s}\cdot6$ and + $26''\cdot5$.

642 Is not found; the nearest star 7 magnitude is in $1^{h}\ 57^{m}\ 35^{s}$ and $143^{\circ}\ 45'\ 34''$.

651 The P.M. in P.D. is not confirmed; difference from G. + $1''\cdot2$, but there is a sensible P.M. in A.R.

No. 714 The P.M. is not confirmed either in A.R. or P.D.; difference from G. $-0^{s}.33$ and $+0''.25$ respectively.

728 An error of 1^{m} in A.R.

738 P.M. not confirmed.

779 Comparison with Brisbane would indicate that the signs of the proper motions both in A.R. and P.D. should be changed, the difference being $+1^{s}.84$ and $-3''.93$.

795 P.M. not confirmed; difference from G. only $-0^{s}.16$ and $-1''.35$.

802 The large P.M. in A.R. has its sign reversed by comparison with G.; that in P.D. appears rather underrated.

814 The P.M. in A.R. is doubtful, that in P.D. nearly confirmed; diff. from G. $-0^{s}.06$ and $+1''.16$.

841 P.M. not confirmed; diff. of A.R. from B. $+0^{s}.45$, from Lacaille $+4^{s}.1$: of P.D. from B. $+0''.12$.

868 Comparison with B. does not confirm the P.M. in A.R. and greatly reduces that in P.D.; diff. $+0^{s}.03$ and $+2''.85$.

876 The P.M. in A.R. appears over-estimated; that in P.D. is if any thing — instead of + : diff. in A.R. from B. $+0^{s}.63$, from L.C. $+4^{s}.9$: in P.D. from B. $-1''.43$.

906 Comparison with B. indicates a considerable P.M. in A.R., but in a direction opposite to that assigned in B.A.C.: diff. from B. $+1^{s}.28$ and $-2''.18$.

911 The large P.M. is not confirmed; there may be a small P.M. in P.D. but little or none in A.R.; diff. from B. $+0^{s}.19$ and $-3''.8$. There is probably an error in Lacaille.

931, 935 } Are not found.

936 A star 8·5 magnitude follows by about $0^{s}.1$ and $8''.5$ S.

956 Agrees exactly with B. in A.R.: diff. in P.D. $-1''.54$.

961 Comparison with B. shows a P.M. of an opposite sign to that in B.A.C. and no P.M. in P.D.: diff. $+1^{s}.10$ and $-0''.11$.

969 Is not found.

988 The P.M. in P.D. appears overrated; diff. from G. $+0''.95$.

1018 The same remark applies; diff. from G. $+0''.59$.

1036 P.M. not confirmed; diff. from B. $+0^{s}.24$ and $-0''.26$.

1048 The P.M. large as it is appears underrated in B.A.C. and unless there be a considerable error in L.C. that in A.R. is not uniform: diff. from B. $+5^{s}.96$ and $-20''.0$; from L.C. $+15^{s}.2$ and $-74''.4$.

1050 The P.M. assigned is not confirmed by comparison with G. diff. $+0^{s}.42$ and $-2''.06$. A star 7½ magnitude follows by $7^{s}.5$ and $3'$ S.

1067 The same remark applies regarding the P.M.: diff. $+0^{s}.41$ and $-0''.82$.

1072 The same remark applies: diff. $-0^{s}.24$ and $-0''.61$.

1101 The P.M. is not confirmed.

1131 The P.M. appears underrated in A.R. and overrated in P.D.; diff. from B. $+0^{s}.92$ and $-3''.88$.

1297 The P.M. appears slightly overrated.

1412 Diff. from L.C. $+2^{s}.1$ and $-34''.6$.

1427 P.M. not confirmed.

1466 The P.M. in B.A.C. appears much underrated in A.R. and overrated in P.D.; difference from B $+0^{s}.91$ and $-2''.0$.

1489 The direction of the P.M. is reversed by comparison with B.; diff. $+1^{s}.14$ and $-4''.06$.

1589 The same remark applies. diff. from B. $+1^{s}.70$ and $-1''.80$.

1612 The P.M. is over-estimated both in A.R. and P.D.; there is probably an error in L.C.; diff. from B. $-0^{s}.54$ and $+4''.2$.

1621 The P.M. in A.R. is reversed; that in P.D. is nearly confirmed; diff. from B. $-0^{s}.77$ and $-3''.7$.

1678, 1696 } The P.M. is not confirmed.

1704 The P.M. in A.R. is underrated: the direction of that in P.D. is reversed; difference from B. $+0^{s}.50$ and $-5''.8$.

No. 1712 The P.M. if any appears to be in a direction opposite to that assigned in B.A.C.; diff. from B. — 0^{s}·45 and — $0''$·58. Another star of about the same magnitude precedes by 4^{s}·0 and $11''$ N.

1728 Both the stars were observed with the Mural circle but only the first with the Transit. The diff. of A.R. 0^{s}·40 was derived from the Equatorial Observations.

1729 There is probably no P.M. in A.R. but that in P.D. is nearly confirmed; diff. from B. — 0^{s}·29 and — $1''$·84.

1752 The P.M. is not confirmed: another star of nearly the same mag. precedes by 1^{s}·6, and $29''$·S; the pair are 10527 and 9 H.C.

1770 The P.M. in A.R. is uncertain; diff. from B + 1^{s}·04 and from L.C. — 0^{s}·2: that in P.D. has been overrated: diff. from B. — $3''$·24.

1790 P.M. in A.R. uncertain; diff. from B + 2^{s}·62; from L.C. — 0^{s}·4; that in P.D. if any must have its sign reversed; diff. from B. + $1''$·5.

1847 P.M. in A.R. not confirmed; that in P.D. has its sign changed: diff. from B. + 0^{s}·27 and — $6''$·36.

1907 This star must have a considerable P.M. unless there be an error in Bessel.

1909 The P.M. in A.R. is deduced from comparison with L.C.; that in P.D. is much reduced by comparison with B.; diff. — $5''$·07.

1921 The P.M. in A.R. is nearly confirmed by comparison with G.; the P.D. differs from his by only + $1''$·1.

1926 The P.M. in A.R. appears to have been slightly overrated; that in P.D. is exactly confirmed; diff. from B + 0^{s}·68 and — $18''$·6.

1927 The P.M. in A.R. is uncertain, B. having but one observation; difference from B. — 1^{s}·24; from L.C. + 0^{s}·5: that in P.D. has been slightly underrated; diff. from B. — $4''$·6.

1942 The P.M. in A.R. is not confirmed; that in P.D. is derived from comparison with G.

1954 The P.M. in A.R. is reversed; that in P.D. is nearly confirmed; diff. from B. = + 0^{s}·46 and — $6''$·44.

1999 A star 8 magnitude precedes 0^{s}·6 and $10''$·S.

2013, 2014 } P.M. not confirmed.

2018 Not found.

2021 The P.M. in A.R. is not confirmed, but that in P.D. is confirmed very nearly.

2031 Comparison with Brisbane shows a larger P.M. in A.R. than that assigned in B.A.C.; that in P.D. is also larger, but with the opposite sign; diff. — 1^{s}·19 and — $7''$·53.

2048 The place differs very widely from Brisbane's; L.C. 2242 should probably be referred to the following star, No. 2049.

2072 P.M. in A.R. not confirmed; that in P.D. has its sign changed; diff. from B. + 0^{s}·34 and + $5''$·17, from L.C. — 1^{s}·8 and — $53''$. There is probably an error in L.C.

2076 The P.M. in A.R. is not confirmed; that in P.D. has been underrated.

2078 The P.M. is nearly confirmed; diff. from B. + 1^{s}·11 and — $6''$·78; from L.C. + 5^{s}·2 and — $31''$·4.

2093 P.M. not confirmed; diff. from B. + 0^{s}·24 and — $0''$·18.

2102 There must be an error in L.C. as his place is out by $4''$.

2106 The P.M. is reversed; diff. from B. — 1^{s}·44 and — $4''$·3.

2121 There is some uncertainty about this star, the differences being from B. — 2^{s}·98 and — $3''$·08; and from L.C. + 4^{s}·1 and — $27''$·3.

2137 The same remark applies; diff. from B. + 0^{s}·88 and — $3''$·22; from L.C. — 2^{s}·5 and + $21''$·8.

2142 The same remark as above; diff. from B. — 1^{s}·76 and + $0''$·8; from L.C. + 1^{s}·0 and — $7''$·2; P.M. in P.D. not confirmed.

2190 Differs from B. + 0^{s}·56 and + $66''$·1; but B. has only one observation.

2238 The A.R. in the B.A.C. is 0^{s}·6 in excess. The position agrees almost exactly with Lalande's as given by Baily.

No. 2284 The A.R differs + $8^{s}\cdot0$, and P.D. — $49''$ from L.C.

2288 The P.M. in A.R. is not confirmed; that in P.D. reversed; diff. from B. — $0^{s}\cdot04$ and — $6''\cdot94$.

2315 The P.M. in A.R. not confirmed; that in P.D. if any is overrated; diff. from B. = + $0^{s}\cdot03$ and — $0''\cdot95$.

2321 P.M. in A.R. doubtful; that in P.D. is very nearly confirmed; diff. from B. — $0^{s}\cdot38$ and $5''\cdot90$.

2360 There is some uncertainty about this star: difference from B. + $1^{s}\cdot04$ and — $1''\cdot58$; from L.C. — $2^{s}\cdot8$ and — $0''\cdot8$; but there would appear to be little or no P.M. in P.D.

2363 P.M. not confirmed.

2386 The P.M. in A.R. appears rather overrated, that in P.D. is reversed; diff. from B. — $0^{s}\cdot22$ and + $1''\cdot6$.

2399 The P.M. in A.R. seems to have been rather overrated; that in P.D. is exactly confirmed; diff. from B. — $0^{s}\cdot67$ and — $1''\cdot7$.

2408 The P.M. in A.R. has been overrated, that in P.D. is not confirmed; diff. from B. — $0^{s}\cdot27$ and + $0''\cdot7$.

2511 A double star in a wide cluster with a star 6½ magnitude preceding; no nebula seen.

2528 The P.M. in A.R. is doubtful; that in P.D. nearly confirmed; diff. from B.— $0^{s}\cdot62$ and — $2''\cdot4$; from L.C. + $2^{s}\cdot6$ and — $12''\cdot5$.

2610 The P.M. appears large, but B. has only one observation; diff. — $2^{s}\cdot92$ and — $7''\cdot0$.

2615 Differs from L.C. by — $1^{s}\cdot9$ and — $9''\cdot3$.

2656 P.M. in A.R. nearly confirmed; that in P.D. reversed; diff. from B. + $0^{s}\cdot37$ and — $5''\cdot8$.

2686 Not seen.

2687 This star is preceded by 3 others of 8th mag nearly in this form .˙ •; diff of A.R. 41^{s}, 38^{s} and 27^{s}.

2688 Is the double star 88 H. and S.

2709 There is some uncertainty about this star, from B. having but one observation of A.R. and with the mural — but the P.M. in P.D. appears over-estimated—diff. from B. — $1^{s}\cdot22$ and + $2''\cdot84$ and from L.C. — $1^{s}\cdot0$ and + $27''\cdot3$.

2713 The P.M. if any in A.R. should have its sign reversed; that in P.D. is not confirmed; diff. from B. — $0^{s}\cdot48$ and — $0''\cdot48$.

2738 The P.M. is underrated; diff. from B. + $0^{s}\cdot98$ and — $4''\cdot4$. A star 9 magnitude precedes by $12^{s}\cdot3$ and $14''$ S.

2751 P.M. not confirmed.

2766 Is a cluster of small stars.

2768 The P.M. is greatly overrated; L.C. is probably in error, but B. has only one observation; diff. from B. — $0^{s}\cdot46$ and — $1''\cdot44$; from L.C. — $5^{s}\cdot6$ and — $11''\cdot6$.

2796 The P.M. in A.R. is not confirmed; that in P.D. is nearly so; diff. from B. + $0^{s}\cdot02$ and — $2''\cdot7$

2820 Comparison with B. reverses the direction of P.M. diff. — $0^{s}\cdot92$ and — $3''\cdot6$.

2823 Comparison with B. does not confirm the P.M. in A.R. but increases that in P.D.; diff. — $0^{s}\cdot06$ and — $5''\cdot0$.

2843 Comparison with B. reverses the P.M. in A.R. and does not confirm that in P.D.; diff. + $0^{s}\cdot98$ and — $0''\cdot1$.

2857 P.M. greatly overrated; L.C. probably in error; diff. from B. + $0^{s}\cdot23$ and — $3''\cdot9$; from L C. + $5^{s}\cdot3$ and — $12''\cdot6$

2887 Is G. 1458 and the proper motions are derived from comparison with him.

2898 Comparison with B. increases the P.M. in A.R. and does not confirm that in P.D.; diff. from B. + $0^{s}\cdot83$ and — $1''\cdot1$; from L.C. + $0^{s}\cdot9$ and + $3''\cdot5$.

2939 The P.M. in A.R. appears underrated; that in P.D. is not confirmed, diff. from B. + $0^{s}\cdot87$ and — $1''\cdot3$.

2949 P.M. not confirmed; diff. from B. — $0^{s}\cdot39$ and — $0''\cdot8$.

3007 Comparison with B. reverses the P.M. both in A.R. and P.D. diff. + $0^{s}\cdot99$ and + $4''\cdot7$.

3008 Comparison with B. nearly confirms the P.M. in P.D., but reverses that in A.R., but B. has only one observation; diff. — $2^{s}\cdot4$ and + $6''\cdot2$.

3028 The P.M. is derived from comparison with B. but he has only one observation.

No. 3067 Comparison with B. reverses the proper motions, but he has only one observation; diff. — $1^{s}\cdot22$ and + $15''\cdot5$, under the supposition that he observed the *following* star.

3082 P.M. not confirmed; diff. from B. + $0^{s}\cdot12$ and + $0''\cdot7$.

3103 P.M. in A.R. not confirmed.

3128 The P.M. in A.R. has been underrated, and that in P.D. overrated; diff. from B. + $0^{s}\cdot57$ and — $2''\cdot4$.

3139 A.R. agrees exactly with B.; P.D. differs + $35''\cdot2$.

3154 Diff. from B. + $1^{s}\cdot77$ and — $8''\cdot2$, but he has only one observation.

3189 Diff. from B. + $10^{s}\cdot08$ and + $7''\cdot0$, but he has only one observation, and has probably made a mistake of 10^{s}.

3233 Is not found.

3247 Cluster, no nebula seen; nearest star 8 magnitude, $9^{h}\ 22^{m}\ 42^{s}$ and $95^{\circ}\ 20'\ 51''$.

3274 The P.M. appears overrated both in A.R. and P.D.; diff. from L.C. + $3^{s}\cdot0$ and — $2''\cdot3$.

3276 Comparison with B. slightly increases the P.M. in A.R. and doubles that in P.D.; diff. + $0^{s}\cdot22$ and — $4''\cdot6$.

3316 P.M. not confirmed; diff. from B. + $0^{s}\cdot25$ and — $0''\cdot9$.

3323 P.M. in A.R. underrated; that in P.D. is reversed; diff. from B. + $0^{s}\cdot38$ and — $8''\cdot2$.

3328 Appears to be a duplicate of 3323 with an error of 1 minute in A.R.

3351 The P.M. in A.R. is overrated; that in P.D. is not confirmed; diff. from B. + $0^{s}\cdot78$ and + $0''\cdot4$.

3357 The P.M. not confirmed.

3401 Not seen.

3426 The P.M. in A.R. has been overrated; that in P.D. is not confirmed; diff. from B. + $0^{s}\cdot25$ and — $0''\cdot7$.

3454, 3461 } Not seen.

3460, 3479 } P.M. not confirmed.

3482 Not found.

3488 The P.M. in A.R. is reversed by comparison with B.; that in P.D. has been underrated; diff. + $1^{s}\cdot14$ and — $2''\cdot8$.

3513 The P.M. in A.R. not confirmed; that in P.D. reversed; diff. from B. — $0^{s}\cdot22$ and — $4''\cdot6$.

3535 Not seen.

3541 P.M. both in A.R. and P.D. reversed by comparison with B.; diff. + $0^{s}\cdot70$ and — $5''\cdot2$.

3543 P.M. in A.R. not confirmed, that in P.D. confirmed.

3547 A cluster of small stars. The P.M. appears overrated both in A.R. and P.D.; probably different stars in the cluster have been observed.

3556 P.M. not confirmed.

3564 The P.M. in A.R. is reversed; that in P.D. nearly confirmed; diff. from B. + $0^{s}\cdot43$ and — $2''\cdot4$.

3586 Not found.

3595 P.M. in A.R. not confirmed; that in P.D. confirmed nearly.

3599 P.M. in A.R. not confirmed; that in P.D. reversed; diff. from B. + $0^{s}\cdot19$ and — $3''\cdot5$.

3605 The P.M. has been underrated; diff. from B. + $0^{s}\cdot74$ and — $4''\cdot0$.

3627 P.M. not confirmed; probably an error in Lalande.

3635 P.M. in A.R. not confirmed; in P.D. doubtful; diff. from B. — $0^{s}\cdot28$ and — $0''\cdot7$.

3639 Diff. from Groombridge — $30^{s}\cdot44$ and + $3''\cdot0$; probably an error of 30^{s}. in G.

3656 P.M. not confirmed; diff. from B. — $0^{s}\cdot47$ and — $1''\cdot0$. B. has only one observation.

No. 3659 B. has only one observation and his A.R. is probably erroneous; diff. $+\,3^{s}{\cdot}56$ and $+\,0''{\cdot}9$; diff. in A.R. from L.C. $-\,2^{s}{\cdot}45$, there is probably little or no P.M.

3668 P.M. not confirmed; diff. from B. $+\,0^{s}{\cdot}22$ and $-\,0''{\cdot}1$.

3674 P.M. not confirmed.

3692 Cluster, no nebula seen.

3694 Diff. from B. $-\,4^{s}{\cdot}64$ and $-\,1''{\cdot}2$; from L.C. $-\,1^{s}{\cdot}47$ and $+\,14''$; an error of 5^{s} in B.?

3706 P.M. in A.R. not confirmed; in P.D. nearly so; diff. from B. $+\,0^{s}{\cdot}28$ and $-\,1''{\cdot}9$.

3707 A duplicate of 3706, with an error of $5'$ in P.D.?

3716 The P.M. has been underrated in A.R., and overrated in P D.; diff. from B. $-\,1^{s}{\cdot}4$ and $-\,1''{\cdot}75$.

3717 The P.M. has been overrated in A.R., and slightly underrated in P.D.

3800 There may be a small + P.M. in A.R.: that in P.D. has been overrated; diff. from B. $+\,0^{s}{\cdot}26$ and $+\,2''{\cdot}7$.

3806 Comparison with B. shews a large P.M.; but he has only one observation; diff. $-\,1^{s}{\cdot}16$ and $-\,7''{\cdot}6$.

3839 P.M. not confirmed, or if any thing reversed; diff. from B. $+\,0^{s}{\cdot}15$ and $-\,1''{\cdot}7$.

3860 The large P.M. in A.R. is increased; that in P.D. reduced by comparison with B, but he has only one observation; diff. $-\,1^{s}{\cdot}94$ and $-\,1''{\cdot}8$; diff. from L C. $-\,5^{s}{\cdot}4$ and $-\,11''{\cdot}6$.

3880 The P.M. in A.R. is not confirmed; that in P.D. is so, very nearly; diff. from B. $+\,0^{s}{\cdot}21$ and $-\,1''{\cdot}5$.

3895 Comparison with B. reduces the P.M. in A.R. and reverses that in P.D. if any; diff. $-\,1^{s}{\cdot}16$ and $-\,1''{\cdot}2$.

3923 }
3924 } The large P.M. assigned to these 2 stars are not confirmed, Lacaille's places of both must be wrong; the numbers require to be interchanged; diff. of 3923 from B. $-\,0^{s}{\cdot}43$ and $-\,2''{\cdot}7$; of 3924 $+\,0^{s}{\cdot}11$ and $-\,1''{\cdot}4$.

3944 Is a cluster of small stars; L.C. and B. appear to have taken different stars; the large P.M. in P.D. is not confirmed.

3960 The P.M. in A.R. appears underrated; that in P.D. is not confirmed; diff. from B. $+\,0^{s}{\cdot}72$ and $+\,1''{\cdot}14$.

4010 This is G. 1830 and the large P.M. is almost exactly confirmed.

4011 The P.M. in A.R. seems rather underrated; that in P D. is not confirmed; diff. from B. $-\,0^{s}{\cdot}95$ and $+\,0''{\cdot}7$.

4041 Diff. from B. $+\,0^{s}{\cdot}90$ and $+\,10'\,1''{\cdot}4$, but he has only one observation, and has doubtless made a mistake of $10'$

4067 P.M. not confirmed; diff. from B. $+\,0^{s}{\cdot}08$ and $-\,0''{\cdot}2$.

4073 P.M. in A.R. not confirmed; that in P.D. is nearly so; diff. from B. $+\,0^{s}{\cdot}45$ and $-\,1''{\cdot}2$, but he has only one observation.

4075 P.M. in A R. not confirmed; that in P.D. reversed; only one observation of B.; diff. $-\,0^{s}{\cdot}14$ and $+\,2''{\cdot}3$.

4105 Comparison with B. reverses the P M.; but he has only one observation; diff. $+\,0^{s}{\cdot}87$ and $+\,1''{\cdot}7$.

4133 The P.M. in A.R. appears underrated; that in P D. not confirmed; diff. from B. $-\,0^{s}{\cdot}56$ and $-\,1''{\cdot}2$.

4146 The P.M. in A.R. if any is overrated; that in P.D. not confirmed; diff. from B. $+\,0^{s}{\cdot}20$ and $+\,1''{\cdot}2$.

4324 The P.M. not confirmed; diff. from B. $+\,0^{s}{\cdot}31$ and $+\,0''{\cdot}6$.

4356 P.M. in A.R. reversed; in P.D. not confirmed; diff. from B. $-\,1^{s}{\cdot}21$ and $-\,0''{\cdot}5$; probably L.C. is in error.

4370 P.M. in A.R. reversed; in P.D. not confirmed; diff. from B. $+\,0^{s}{\cdot}80$ and $-\,0''{\cdot}3$.

4381 P.M. in A.R. nearly confirmed; that in P.D. appears overrated; diff. from B. $+\,0^{s}{\cdot}18$ and $+\,0''{\cdot}6$.

4399 Not seen.

4410 The large P.M. is not confirmed.

4469 P.M. in A.R. not confirmed; that in P.D. has been rather underrated; diff. from B. $0^{s}{\cdot}00$ and $-\,2''{\cdot}9$.

4475 The P.M. has been underrated, and the sign of that in P.D. is changed; diff. from B. $-\,0^{s}{\cdot}95$ and $-\,3''{\cdot}5$.

4485 Cluster; no nebula seen.

4491 P.M. not confirmed.

4512 P.M. in A.R. reversed; in P.D. not confirmed; diff. from B. $-\,2^{s}{\cdot}98$ and $-\,1''{\cdot}3$.

No. 4524 Comparison with B. does not confirm the P.M., but he has only one observation: diff. — $0^{s}{\cdot}11$ and + $1''{\cdot}9$.

4557 P.M. not confirmed; diff. from B. — $0^{s}{\cdot}02$ and + $1''{\cdot}6$.

4558 This is a double star, and Brisbane has noted it as such, and he must apparently have observed the L.C. star, though he does not state which: the P.M. in A.R. is overrated; that in P.D. is not confirmed; diff. from B. — $0^{s}{\cdot}24$ and + $1''{\cdot}5$.

4569 Is not found.

4573 The middle star of 3 was observed. L.C. probably took the 1st, and B. appears to have observed the 2d with the mural, and 3d with the transit, there being a diff. of 3^{s} between the two; in this case there will be little or no P.M.; diff. from B. — $0^{s}{\cdot}22$ and + $1''{\cdot}1$.

4644 P.M. not confirmed; if any, reversed; diff. from B. — $0^{s}{\cdot}35$ and + $1''{\cdot}9$.

4703 P.M. in A.R. not confirmed, in P.D. reversed: diff. from B. — $0^{s}{\cdot}28$ and — $9''{\cdot}0$.

4732 The P.M. in A.R. is reversed; that in P.D. has been underrated; diff. from G. — $0^{s}{\cdot}58$ and + $4''{\cdot}7$.

4740 The P.M. in A.R. is nearly confirmed; that in P.D. has been rather underrated: diff. from B. — $0^{s}{\cdot}55$ and — $6''{\cdot}4$; but B. has only one observation.

4844 P.M. in A.R. doubtful; that in P.D. not confirmed; diff. from B. — $0^{s}{\cdot}57$ and — $0''{\cdot}1$.

4860 The large P.M. in A.R. is not confirmed.

4887 The P.M. in A.R. has been underrated; that in P.D. is reversed; diff. from B. — $0^{s}{\cdot}83$ and — $5''{\cdot}6$.

4899 The P.M. appears to have been slightly underrated: diff. from B. — $0^{s}{\cdot}76$ and — $1''{\cdot}2$.

4908 The P.M. in A.R. is reversed; that in P.D. nearly confirmed; diff. from B. — $1^{s}{\cdot}20$ and — $1''{\cdot}5$.

4912 The P.M. in A.R. is not confirmed, in P.D. doubtful; diff. from B. + $0^{s}{\cdot}01$ and — $52''{\cdot}1$; from L.C. + $0^{s}{\cdot}4$ and — $9''{\cdot}0$; perhaps B. has made an error of $1'$; he has only one observation.

4921 The P.M. in A.R. is confirmed; but not in P.D.

4938 The P.M. in A.R. is nearly confirmed: that in P.D. has been overrated: diff. from B. — $0^{s}{\cdot}37$ and — $1''{\cdot}1$.

4968 The A.R. is 1^{m} in error.

4979 Differs from L.C. by — 14^{s} and — $6'$.

4980 P.M. in A.R. somewhat overrated; in P.D. none: diff. from G. — $0^{s}{\cdot}62$ and + $0''{\cdot}03$.

4983 Is not found.

5007 Comparison with B. increases the P.M. in A.R., and reverses that in P.D.; diff. — $0^{s}{\cdot}64$ and — $2''{\cdot}1$.

5025 Is not found.

5040 Cluster of stars of 7 and 8 mag.; P.M. not confirmed; B. has but one observation; diff. + $0^{s}{\cdot}23$ and — $0''{\cdot}8$.

5042 P.M in A.R. overrated: in P.D. not confirmed; diff. from B. — $0^{s}{\cdot}43$ and — $1''{\cdot}3$.

5045 Diff. from B. — $1^{s}{\cdot}04$ and + $4''{\cdot}5$.

5049 The P.M. in A.R. is not confirmed; that in P.D. is nearly so.

5080 P.M. in A.R. not confirmed; in P.D. reversed; diff. from B. + $0^{s}{\cdot}19$ and — $3''{\cdot}9$.

5081 P.M. in A.R. nearly confirmed; in P.D. not so; diff. from B. — $0^{s}{\cdot}78$ and + $1''{\cdot}1$.

5101 P.M. in A.R. doubtful; that in P.D. is reversed; diff. from B. — $0^{s}{\cdot}30$ and — $5''{\cdot}1$.

5106 Comparison with B. reverses the P.M. in A.R., and increases that in P.D.; diff. + $0^{s}{\cdot}65$ and + $3''{\cdot}2$.

5111 A double star, components nearly equal. S. 673.

5114 The P.D. is in error $5'$.

5117 The N.P.D. should be $114^{\circ}{\cdot}36'$. Taylor being right.

5137 The P.M. in A.R. is underrated, and in P.D. overrated: diff. from B. — $0^{s}{\cdot}36$ and + $4''{\cdot}3$.

5162 Is not found.

5170 P.M. in A.R. (if any) has been overrated; that in P.D. is not confirmed; diff. from B. — $0^{s}{\cdot}14$ and — $0''{\cdot}3$.

No. 5174 The P.M. in A.R. is nearly confirmed; that in P.D. reversed; diff. from B. — $0^{s}{\cdot}34$ and — $2''{\cdot}9$; but he has only one observation.

5179 There is probably little or no P.M.; B. has only one observation; diff. — $1^{s}{\cdot}12$ and + $2''{\cdot}7$.

5182 The same remark applies; diff. from B. — $1^{s}{\cdot}26$ and — $1''{\cdot}4$.

5183 The P.M. in A.R. has been overrated; that in P.D. is reversed; diff. from B. — $0^{s}{\cdot}50$ and + $2''{\cdot}6$.

5186 The P.M. in A.R. is nearly confirmed; that in P.D. reversed; diff. from B. — $1^{s}{\cdot}13$ and + $4''{\cdot}1$.

5193 The P.M. in A.R. (if any) has been overrated; that in P.D. is not confirmed; diff. from B. + $0^{s}{\cdot}16$ and — $1''{\cdot}2$.

5200 Comparison with Brisbane and Taylor gives nearly the same P.M. in A.R.; while the P.D. is intermediate between the two.

5202 P.M. in A.R not confirmed; that in P.D. has been slightly overrated; diff. from B. + $0^{s}{\cdot}07$ and + $7''{\cdot}5$.

5209 P.M. not confirmed: diff. from B. + $0^{s}{\cdot}02$ and — $1''{\cdot}1$.

5213 P.M. reversed: diff. from B. + $0^{s}{\cdot}37$ and — $4''{\cdot}1$.

5217, 5218 P.M. not confirmed.

5225 The P.M. in A.R. has been underrated; that in P.D. is reversed. diff. from B. — $1^{s}{\cdot}19$ and — $8''{\cdot}0$.

5229 Probably no P.M.; diff. from B. + $0^{s}{\cdot}37$ and + $1''{\cdot}3$.

5231 P.M. in A.R. not confirmed; in P.D. reversed; diff. from B — $0^{s}{\cdot}13$ and — $4''{\cdot}9$.

5241 Is not found; probably a duplicate of 5247.

5247 P.M. in A.R. not confirmed.

5256 Comparison with B. reverses the P.M.; diff. — $0^{s}{\cdot}72$ and + $1''{\cdot}1$.

5261 P.M. in A.R. reversed: in P.D. confirmed; diff. + $0^{s}{\cdot}81$ and + $1''{\cdot}3$.

5263 P.M. not confirmed; diff. from B. + $0^{s}{\cdot}08$ and + $0''{\cdot}8$.

5288 Differs from L.C. + $4^{s}{\cdot}6$ and + $4''{\cdot}5$.

5300 A wide cluster of stars of 7 and 8 mag.; P. M. not confirmed; diff. from B. — $0^{s}{\cdot}04$ and — $0''{\cdot}2$; B. and L.C. have probably observed different stars.

5301 P.M. perhaps underrated in A.R. and overrated in P.D.; but B. has only one observation diff. — $1^{s}{\cdot}45$ and + $3''{\cdot}4$

5305 P.M. in A.R. exactly confirmed; that in P.D. (if any) reversed ; diff. from B. + $0^{s}{\cdot}43$ and — $1''{\cdot}0$, but he has only one observation.

5308 The P.M. in A.R. has been underrated: that in P.D. is reversed; diff. from B. + $0^{s}{\cdot}95$ and + $3''{\cdot}8$.

5323 Comparison with B. reverses the P.M. (if any); but he has only one observation; diff. — $0^{s}{\cdot}81$ and — $1''{\cdot}7$.

5349 Not found; perhaps a duplicate of 5350.

5353 P.M. in A.R. reversed; in P.D. not confirmed: diff. from B. — $1^{s}{\cdot}20$ and + $0''{\cdot}1$; L.C. is probably in error.

5370 P.M. in A.R. somewhat overrated, that in P.D. confirmed: diff. from B. + $0^{s}{\cdot}30$ and + $3''{\cdot}9$.

5372 B. has only one observation and his A.R. is probably in error. diff. + $3^{s}{\cdot}51$ and + $0''{\cdot}4$.

5389 Differs from L.C. + $6''$ in P.D.

5402 The P.M. in A.R. is not confirmed, and that in P.D. appears overrated; diff. from B. + $0^{s}{\cdot}29$ and + $2''{\cdot}8$.

5415 Not found; nearest star 6 mag. is in $16^{h}\ 6^{m}\ 59^{s}$ and $31^{\circ}\ 40'\ 11''$.

5424 P.M. reversed ; diff. from B. + $1^{s}{\cdot}03$ and — $1''{\cdot}6$.

5454 The P.M. in A.R. is nearly confirmed; that in P.D. has been underrated; diff. from B. — $0^{s}{\cdot}28$ and — $3''{\cdot}9$.

5459 G. appears to have made an error of $1'$ in the P.D.

5470 Is a cluster of small stars, and B. and L.C. have probably taken different ones.

5482 Is not found.

5485 P.M. not confirmed; diff. from B + $0^{s}{\cdot}17$ and +. $1''{\cdot}8$.

No. 5486 P.M. in A.R. not confirmed; in P.D. nearly so; diff. from B. $+ 0^{s}.09$ and $- 2''.3$.

5487 Comparison with B. reverses the P.M. in A.R. and greatly increases that in P.D.; but he has only one observation.

5491 Not found.

5505 P.M. not confirmed: diff. from B. $- 0^{s}.06$ and $- 1''.4$.

5524 Is not found.

5540 The P.M. in A.R. is not confirmed; the diff. from L.C. being only $- 0^{s}.76$: that in P.D. is overrated; diff. from B. $- 4^{s}.81$ and $+ 2''.2$, but he has only one observation and has probably made a mistake of 5^{s}.

5543 The P.M. though small is nearly confirmed: diff. from B. $- 0^{s}.32$ and $+ 0''.8$.

5564 Differs from L.C. $- 3^{s}.5$ and $- 9''.4$.

5570 Differs from L.C. $+ 5^{s}.8$ and $+ 5''.7$.

5612 Differs from L.C. $- 4^{s}.5$ and $- 123''$.

5613 P.M. in P.D. (if any) reversed: diff. from B. $- 0^{s}.21$ and $- 2''.4$.

5636 Comparison with B. increases the P.M. in A.R. and negatives that in P.D.; but he has only one observation; diff. $- 1^{s}.21$ and $- 0''.2$.

5657 P.M. not confirmed: diff. from B. $- 0^{s}.03$ and $+ 0''.5$.

5662 Not found.

5665 Not found. There is a star of 8 magnitude in $16^{h}\ 44^{m}\ 33^{s}$ and $120^{\circ}\ 29'\ 58''$.

5672 Not found.

5673 Two stars were observed, neither of which agrees well with Lacaille's place.

5685 Not found.

5699 P.M. in A.R. reversed; but B. has only one observation; that in P.D. not confirmed; diff. $- 1^{s}.36$ and $- 0''.1$.

5707 Not found.

5715 The P.M. in A.R. is not confirmed, that in P.D. is nearly so, small as it is; diff. from B. $+ 0^{s}.19$ and $+ 0''.66$.

5722 Differs from B $+ 3^{s}.87$ and $- 78''.3$; but he has only one observation.

5725
5738 Not found.
5741

5751 Comparison with B. reverses the P.M. (if any); diff. $- 0^{s}.34$ and $- 2''.0$.

5754 The P.M. in A.R. is confirmed, that in P.D. appears somewhat overrated.

5764 The P.M. in A.R. has been overrated; that in P.D. is reversed; diff. from B. $- 0^{s}.25$ and $+ 2''.6$.

5770 Is not found; it is perhaps a duplicate of 5772, the P.M. of which has been overrated.

5805 The P.M. in A.R. is reversed; that in P.D. has been overrated; diff. from B. $+ 0^{s}.60$. and $+ 3''.8$, but he has only one observation.

5806 The P.M. in A.R. is doubtful, that in P. D. has been much overrated; diff. from B. $- 0^{s}.35$ and $+ 1''.8$.

5812
5815 The P.M. is not confirmed.

5816 Is not found; perhaps a duplicate of the preceding.

5819 Diff. from B. $- 6^{s}.20$ and $+ 3''.1$; the large diff. in A.R. is unaccountable.

5825 The large P.M. in A.R. is almost exactly confirmed; that in P.D. has been overrated: diff. from B. $+ 2^{s}.79$ and $+ 2''.9$.

5849 Not seen.

5859 The P.M. in A.R. is much overrated, that in P.D. is reversed; diff. from B. $- 0^{s}.27$ and $- 4''.0$.

5870 The P.M. in A.R. is nearly confirmed; but not in P.D.; diff. from B. $- 0^{s}.38$ and $- 0''.1$.

5872 The same remark applies; diff. from B. $- 0^{s}.38$ and $+ 0''.5$.

5875 The P.M. is not confirmed: diff. from B. $+ 0^{s}.03$ and $+ 1''.2$; but he has only one observation.

No. 5879 Differs from L.C. by -10^{s} and $+4''$.

5889, 5895 P.M. not confirmed.

5897 The large P.M. in P.D. is not confirmed, the place agreeing very nearly with L.C.; B. has probably made a mistake of $1'$, he had but one observation: diff. from B. $-0^{s}.72$ and $+58''.9$; from L.C. $-0^{s}.7$ and $+9''$.

5898 Differs from L.C. $-66^{s}.0$ and $+194''$.

5916 L.C. is probably in error; diff. $-8^{s}.0$ and $+243''$.

5923 No star is found in the place assigned, but there are several stars of 8th magnitude in the neighbourhood.

5924 The P.M. (if any) is reversed; diff. from B. $+0^{s}.63$ and $-1''.4$; but he has only one observation.

5928 Not found.

5938 Comparison with B. reverses the P.M. in A.R. and much reduces that in P.D.; but he has only one observation; diff. $+1^{s}.39$ and $+1''.4$.

5965 The P.M. is reversed; diff. from B. $+0^{s}.98$ and $-3''.0$.

5969 P.M. not confirmed.

5977 Differs from L.C. $+3^{s}.4$ and $+8''.8$.

6000 The P.M. in A.R. is not confirmed; that in P.D. reversed; diff. from B. $-0^{s}.16$ and $-12''.3$.

6011 Differs from L.C. $-6^{s}.7$ and $-152''$.

6032 Differs from L.C. $-6^{s}.2$ and $-140''$.

6055 P.M. not confirmed: diff. from B. $+0^{s}.22$ and $0''.0$.

6090 P.M. in A.R. nearly confirmed; in P.D. reversed; diff. from B. $-0^{s}.21$ and $-4''.1$.

6100 Comparison with B. negatives the P.M. in A.R. but doubles that in P.D.; diff. $+0^{s}.07$ and $+3''.0$.

6132 A star 8 magnitude follows by about 1^{s}.

6136 Comparison with B. greatly reduces the P.M. in A.R. and reverses that in P.D.: diff. $-0^{s}.46$ and $+2''.9$.

6148 Comparison with B. reverses the P.M.; diff. $+0^{s}.84$ and $-0''.9$.

6163 A star 9 magnitude precedes by 6^{s}, and $6''$ N.

6165 There appears an error of 30^{s} in Lalande's A.R.

6170 Comparison with B. reverses the P.M. in A.R.; and greatly reduces that in P.D.; diff. $+1^{s}.47$ and $+1''.7$.

6173 Differs from L.C. $-7^{s}.4$ $+232''$.

6201 A wide cluster, no nebula seen.

6207 Comparison with B. reverses the P.M. but he has only one observation; diff. $+0^{s}.42$ and $+3''.1$.

6212 Differs from L.C. $-7^{s}.6$ and $-7''.7$.

6219 Differs from B. $+7^{s}.75$ and $+1''.0$; but he has only one observation.

6288 The P.M. in A.R. appears underrated; that in P.D. is not confirmed.

6303 There appears to have been an error of 30^{s} in the A.R.

6328 Comparison with B. increases the P.M. in A.R. and negatives that in P.D.; diff. $-0^{s}.92$ and $+0''.7$.

6337 Comparison with B. reverses the P.M. in A.R. and negatives that in P.D.; diff. $-1^{s}.06$ and $+0''.1$.

6374 Differs from L.C. $+2^{s}.4$ and $+93''$.

6410 P.M. not confirmed; diff. from G. $+0^{s}.22$ and $-1''.7$.

6425 Comparison with B. reverses the P.M. in A.R., and does not confirm that in P.D.; diff. $+1^{s}.09$ and $+1''.3$.

6469 The P.M. in A.R. appears to have been underrated, and that in P.D. overrated.

6472 P.M. not confirmed: diff. from B. $+0^{s}.25$ and $+0''.1$.

6481 Comparison with B. reverses the P.M. in A.R., and negatives that in P.D.; but he has only one observation: diff. $+0^{s}.74$ and $+1''.5$.

No. 6542 Is not found; nearest star 6 magnitude in $19^{h}\ 0^{m}\ 22^{s}\cdot8$ and $65^{\circ}\ 58'\ 40''\cdot3$.

6571 P.M. not confirmed. A star 7 magnitude, follows by $1^{s}\cdot0$ and $2'\ 29''$ N.

6578 Lacaille's A.R. is 1^{m} wrong.

6579 This is a double star, H. and S. 290. The places of both are given. The pair appears to have a large P.M. but the exact amount cannot be assigned as it is not known which of the two was observed by G.

6725 Not seen.

6757 Comparison with B. somewhat reduces the P.M. in A.R. and negatives that in P.D.; but he has only one observation; diff. + $0^{s}\cdot86$ and — $1''\cdot3$.

6770 Not seen: nearest star $19^{h}\ 38^{m}\ 29^{s}$ and $118^{\circ}\ 51'$.

6775 Not found: there is a star of 6½ mag. in $19^{h}\ 39^{m}\ 50^{s}$ and $119^{\circ}\ 9'\ 10''$, and one of 8½ mag. in $19^{h}\ 39^{m}\ 19^{s}$ and $119^{\circ}\ 15'\ 58''$.

6813 Comparison with G. reverses (if any thing) the P.M. in A.R. and nearly confirms that in P.D.; diff. — $0^{s}\cdot30$ and — $4''\cdot8$.

6835 This star is noted as double.

6855 P.M. not confirmed.

6898, 6917 } Not found.

6941 P.M. not confirmed.

6945 Comparison with B. reverses the P.M. in A.R. and does not confirm that in P.D.; diff. + $0^{s}\cdot88$ and — $1''\cdot4$.

6954 P.M. in A.R. not confirmed: that in P.D. has been underrated.

6960 P.M. not confirmed.

6961 Comparison with B. increases the P.M.; diff. + $1^{s}\cdot05$ and + $4''\cdot5$.

6984 Two nearly equal stars differing considerably from Lacaille's place.

6986 P.M. not confirmed; diff. from G. — $0^{s}\cdot13$ and — $0''\cdot5$

6996 The P.M. in A.R. is not confirmed; that in P.D. though small is nearly confirmed; diff. from G. — $0^{s}\cdot28$ and — $1''\cdot0$.

7006 P.M. not confirmed.

7037 Comparison with G. reverses the P.M. in P.D.

7056 The P.M. has been much overrated; diff. from B. — $0^{s}\cdot22$ and + $4''\cdot3$.

7074 The same remark applies; diff. from B. — $0^{s}\cdot43$ and + $8''\cdot4$.

7082 Comparison with B. increases the P.M. in A.R. and reverses that in P.D.; diff. + $1^{s}\cdot05$ and — $6''\cdot3$.

7095 The P.M. appears overrated.

7104 The P.M. is overrated in A.R., and underrated in P.D.

7142 The P.M. in A.R. appears underrated; that in P.D. is not confirmed.

7150 P.M. not confirmed.

7163 Rumker's A.R. must be 2^{m} in error.

7180 The P.D. differs — $5'\ 40''$ from L.C. A star 8½ magnitude precedes by 4^{s} and $4'\ 20''$ N.

7208 Not found; probably a duplicate of 7210 with an error of 1^{m}.

7214 Not found; probably a duplicate of 7225 with an error of 1^{m}.

7259 Comparison with G. confirms the small P.M. in A.R.; diff. + $0^{s}\cdot23$ and — $2''\cdot1$.

7268 Lalande's A.R. appears to be erroneous.

7290, 7295 } P.M. not confirmed.

7307 Comparison with B. reverses the P.M. in A.R.; and greatly reduces that in P.D.; + diff. + $2^{s}\cdot39$ and + $2''\cdot5$.

7327 A star of 7½ magnitude precedes by $11^{s}\cdot7$ and $3'\ 56''$ S.

7341 P.M. not confirmed.

No. 7347 There is probably an error in L.C.; the nearest star differs $-\,9^{s}{\cdot}8$ and $+\,280''$ from his place.

7348 The P.M. in A.R. appears underrated; that in P.D. is not confirmed.

7417 A star 6½ magnitude precedes by $114^{s}{\cdot}9$ and $26''{\cdot}3$ S.

7457 A thin cluster of stars of 8th and 9th magnitude; B. and L.C. have observed different stars, and B. has probably observed different stars with the Transit and Mural.

7467 Is not found: no doubt it is identical with 7466.

7472 P.M. nearly confirmed.

7483 A star 7 magnitude precedes by $26^{s}{\cdot}8$ and $82''$ S.

7531 Comparison with B. reverses the P.M. in A.R., and negatives that in P.D.; diff. $+\,0^{s}{\cdot}65$ and $-\,0''{\cdot}3$.

7552 Comparison with B. reverses the P.M.; diff. $+\,0^{s}{\cdot}65$ and $+\,10''{\cdot}1$.

7564 Comparison with G. negatives the P.M. in A.R.; and reverses that in P.D.; diff. $-\,0^{s}{\cdot}07$ and $+\,3''{\cdot}2$.

7576 Is not found; it is perhaps a duplicate of 7575 with an error of 2° in P.D.

7594 If there be no error in B. the large P.M. in A.R. must be increased, but that in P.D. is reversed; diff. $-\,4^{s}{\cdot}69$ and $+\,5''{\cdot}1$.

7609 Comparison with B. reverses the P.M.; diff $+\,0^{s}{\cdot}91$ and $-\,1''{\cdot}0$.

7624 Comparison with B. reduces the P.M. in A.R. and reverses that in P.D.; but he has only one observation; diff. $-\,0^{s}{\cdot}27$ and $+\,1''{\cdot}7$.

7631 G. has apparently made an error of 10^{s} in A.R. The P.M. in P.D. is not confirmed; diff. $-\,10^{s}{\cdot}18$ and $-\,1''{\cdot}0$. Another star 6½ magnitude precedes by $0^{s}{\cdot}5$ and $17''$ S.

7667 P.M. in A.R. doubtful; in P.D. not confirmed.

7699 Comparison with G. negatives the P.M. in A.R., but shews a large one in P.D.: it is noted as double; the companion 7 magnitude preceding about 1^{s}.

7717 The P.M. in A.R. is confirmed.

7734 The P.M. in A.R. is nearly confirmed, but not that in P.D.

7754 Comparison with G. confirms the P.M. nearly; diff. $+\,0^{s}{\cdot}76$ and $-\,7''{\cdot}5$.

7760 Comparison with G. negatives the P.M. in A.R. but nearly confirms that in P.D.; diff. $-\,0^{s}{\cdot}16$ and $-\,3''{\cdot}6$.

7769 Differs from L.C. $+\,5^{s}{\cdot}0$ and $+\,7''{\cdot}0$.

7810 Another star follows by $0^{s}\,93$, nearly on the parallel; the pair form the double star H. and S. 348.

7834 The P.M. in A.R. is nearly confirmed, but not that in P.D.

7841 Comparison with B. reverses the P.M., diff. $+\,1^{s}{\cdot}39$ and $-\,2''{\cdot}2$.

7876 The P.M. has been slightly overrated; diff. from G. $+\,0^{s}{\cdot}83$ and $-\,6''{\cdot}4$.

7877 P.M. not confirmed.

7878 Comparison with G. considerably reduces the P.M.: diff. $+\,0^{s}{\cdot}52$ and $-\,8''{\cdot}4$.

7953 P.M. not confirmed.

7956 The P.M. in A.R. (if any) is overrated, that in P.D. is not confirmed; diff. from B. $-\,0^{s}{\cdot}14$ and $+\,0''{\cdot}2$.

7968 P.M. not confirmed.

8000 The P.M. appears underrated in A.R., and overrated in P.D.

8011 The A.R. agrees exactly with L.C. but differs $+\,2^{s}{\cdot}09$ from B. who may be in error, as he has but one observation with the Mural. The P.M. in P.D. is reversed; diff. from B. $-\,4''{\cdot}1$.

8018 The P.M. is not confirmed.

8042 Is not found; nearest star 7 magnitude in $23^{h}\,1^{m}\,55^{s}\,3$ and $154^{\circ}\,0'\,7''$.

8056 P.M. not confirmed.

No. 8096 The P.M. in A.R. is perhaps overrated; that in P.D. is not confirmed.

8101 A star 9 magnitude precedes by 5^{s} and $4''\cdot5$ N.

8107 The P.M. is nearly confirmed; diff. from G. $+ 0^{s}\cdot23$ and $+ 9''\cdot9$.

8140 P.M. in A.R. doubtful; that in P.D. is reversed: diff. from B. $+ 0^{s}\cdot24$ and $- 4''\cdot2$.

8147 The P.M. is nearly confirmed.

8158 The P.M. in P.D. is reversed; diff. from G. $+ 0^{s}\cdot31$ and $- 2''\cdot1$.

8164 Differs from L.C. $- 12^{s}\cdot5$ and $- 190''$. His place is probably erroneous.

8165 Comparison with B. greatly reduces (if any) the P.M. in A.R., and negatives that in P.D.; diff. $- 0^{s}.21$ and $+ 0''\cdot6$.

8166 Comparison with B. reverses the P.M. in A.R. but nearly confirms that in P.D.; diff. $+ 0^{s}\cdot61$ and $- 6''\cdot8$.

8173 Comparison with G. reverses the P.M. in P.D.; diff. $+ 0^{s}\cdot48$ and $- 2''\cdot8$.

8176 Comparison with B. negatives the P.M. in A.R. and reverses that in P.D.; diff. $+ 0^{s}\cdot12$ and $- 2''\cdot7$.

8181 The P.M. appears underrated.

8207 Comparison with B. negatives the P.M. in A.R. and increases that in P.D.; diff. $+ 0^{s}\cdot29$ and $- 7''\cdot4$.

8226 Comparison with B. negatives the P.M. in A.R. and reverses that in P.D.; diff. $+ 0^{s}\cdot24$ and $- 2''\cdot7$.

8235 The P.M. in A.R. appears overrated; that in P.D. is not confirmed: the star is perhaps variable as the estimated magnitudes vary from 6½ to 10.

8247 The P.M. is not confirmed.

8253 The P.M. in A.R. is nearly confirmed; that in P.D. is underrated; diff. from B. $- 0^{s}\cdot72$ and $- 6''\cdot7$. A star 7½ magnitude follows by $5^{s}\cdot4$ and $4'$ N.

8260 The P.M. in A.R. is not confirmed, the difference from L.C. being only $+ 1^{s}\cdot3$; that in P.D. is overrated. Rumker has probably made an error of 10^{s}.

8272 A star 7½ magnitude follows by $6^{s}\cdot4$ and $3\frac{1}{2}'$ S.

8278 The P.M. is not confirmed; B. has only one observation, and has probably made an error of 5^{s}; diff. $+ 4^{s}\cdot26$ and $+ 0''\cdot4$.

8294 The P.M. has been overrated in A.R.; and underrated in P.D.

8306 The P.M. appears rather underrated in A.R., and overrated in P.D.; diff. from L.C. $+ 1^{s}\cdot1$ and $- 12''\cdot7$.

8320 The P.M. is not confirmed.

8325 The P.M. is doubtful.

8340 P.M. not confirmed.

8347 The P.M. in P.D. has been overrated.

8371 The P.M. is not confirmed.

MEAN PLACES

OF

97 PRINCIPAL FIXED STARS,

FROM

OBSERVATIONS MADE AT THE MADRAS OBSERVATORY,

IN THE YEARS 1848—52,

REDUCED TO JANUARY 1ST, 1850.

M

MEAN PLACES OF 97 PRINCIPAL FIXED STARS,

Names.	Mean Right Ascension, January 1st, 1850.				Mean North Polar Distance, January 1st, 1850.			
	No. of Observations.	Observations in 1848–1852.	Mean.	Greenwich 12 yr. Catalogue, 1845.	No. of Observations.	Observations in 1848–1852.	Mean.	Greenwich 12 yr. Catalogue, 1845.
		h. m. s.	s.	s.		° ′ ″	″	″
λ Ursæ Minoris	23	20 13 1·12	0·72	1·70	23	1 8 22·09	21·79	22·01
	16	12 57·38			16	21·55		
	34	13 0·96			30	22·17		
	19	12 57·45			14	21·14		
	31	13 3·90			22	21·53		
α Ursæ Minoris	58	1 5 1·37	1·34	0·65	54	1 29 25·74	24·84	4·75
	62	1·47			65	24·98		
	77	1·34			61	25·17		
	72	1·36			40	24·06		
	62	1·14			37	23·65		
51 Cephei	30	6 28 33·21	33·18	32·22	35	2 44 39·52	39·00	38·20
	45	33·29			44	39·29		
	42	34·58			41	38·85		
	35	32·55			34	38·89		
	29	31·70			24	38·31		
δ Ursæ Minoris	25	18 20 44·42	43·72	43·60	26	3 24 10·35	10·58	10·08
	34	43·11			30	10·69		
	23	43·51			23	10·79		
	42	43·55			44	10·65		
	49	43·94			29	10·40		
ε Ursæ Minoris	8	17 1 31·53	31·42	31·54	10	7 43 28·48	27·99	28·09
	11	31·42			12	27·93		
	3	31·24			3	27·29		
	1	31·69			1	26·71		
	2	31·12			2	27·62		
ζ Ursæ Minoris	9	15 49 31·63	31·38	31·60	7	11 44 48·88	48·07	48·11
	8	31·56			9	47·81		
	—	—			—	—		
	2	30·36			1	44·44		
	8	31·19			4	48·14		
γ Cephei	6	23 33 13·75	13·78	14·02	5	13 12 14·13	16·89	16·68
	2	13·72			1	18·41		
	6	13·85			6	17·04		
	—	—			—	—		
	3	13·72			2	16 15		
β Ursæ Minoris	14	14 51 11·83	11·43	12·00	13	15 13 54·12	54·09	53·62
	17	11·97			18	53·40		
	15	11·40			17	53·95		
	36	11·14			32	54·83		
	16	11·18			13	53·40		
β Cephei	9	21 26 42·22	42·03	42·35	9	20 5 49·85	50·23	49·55
	—	—			—	—		
	4	41·83			4	49·86		
	13	41·95			10	50·41		
	2	42·07			8	50·76		
α Ursæ Majoris	50	10 54 25·32	25·22	25·71	46	27 26 25·66	25·67	25·85
	56	25·30			53	25·45		
	42	25·33			46	25·83		
	15	25·30			8	26·16		
	34	25·14			32	25·70		

Names.	Mean Right Ascension, January 1st, 1850.						Mean North Polar Distance, January 1st, 1850.					
	No. of Observations.	Observations in 1848–1852.			Mean.	Greenwich 12 yr. Catalogue, 1845.	No. of Observations.	Observations in 1848–1852.			Mean.	Greenwich 12 yr. Catalogue, 1845.
		h.	m.	s.	s.	s.		°	′	″	″	″
	18	21	14	59·44			19	28	2	56·95		
	1			59·38			1			57·83		
α Cephei	9			59·33	59·30	59·78	2			53·05	56·38	55·58
	24			59·14			24			56·17		
	6			59·40			5			56·90		
	—	16	21	—			—			—		
	2			57·66			2	28	8	42·77		
η Draconis	—			—	57·70	58·29	—			—	42·77	42·39
	1			57·79			—			—		
	—			—			—			—		
	13	0	31	1·17			15	34	17	11·72		
	1			1·43			1			9·54		
α Cassiopeæ	35			1·11	1·16	1·59	33			10·29	10·98	10·11
	50			1·09			36			11·52		
	31			0·98			15			10·58		
	36	11	45	54·75			37	35	28	15·75		
	43			54·67			34			15·81		
γ Ursæ Majoris	33			54·76	54·70	55·07	32			15·89	15·96	16·71
	14			54·74			9			16·60		
	19			54·51			19			16·42		
	8	17	27	2·48			9	37	35	8·45		
	5			2·35			5			7·70		
β Draconis	—			—	2·36	2·73	1			9·67	8·71	8·20
	15			2·32			17			9·09		
	13			2·33			2			8·63		
	17	9	22	47·45			19	37	38	32·08		
	20			47·40			20			32·63		
θ Ursæ Majoris	14			47·47	47·45	47·64	15			31·48	32·17	33·16
	5			47·68			5			31·77		
	5			47·35			6			32·94		
	17	17	53	7·19			17	38	28	29·16		
	16			7·21			14			29·17		
γ Draconis	10			7·08	7·05	7·46	10			29·60	29·49	29·30
	52			6·96			53			29·80		
	25			7·04			19			29·14		
	29	13	41	37·14			36	39	56	10·94		
	35			37·10			36			11·19		
η Ursæ Majoris	12			37·16	37·11	37·38	13			11·73	11·37	10·09
	23			37·08			16			11·49		
	21			37·08			20			12·13		
	36	3	13	38·10			34	40	40	39·76		
	39			38·06			29			39·59		
α Persei	31			38·12	38·03	38·38	40			39·79	39·58	39·19
	48			37·94			43			39·47		
	29			37·93			12			38·72		
	47	8	48	54·50			48	41	22	24·72		
	43			54·50			47			24·86		
ι Ursæ Majoris	13			54·58	54·50	54·69	15			24·23	24·77	24·44
	21			54·47			18			24·59		
	23			54·48			27			25·10		

Names.	Mean Right Ascension, January 1st, 1850. No. of Observations.	Observations in 1848–1852.	Mean.	Greenwich 12 yr. Catalogue, 1845.	Mean North Polar Distance, January 1st, 1850. No. of Observations	Observations in 1848–1852.	Mean.	Greenwich 12 yr. Catalogue, 1845.
		h. m. s.	s.	s.		° ′ ″	″	″
α Aurigæ	29	5 5 36·75	36·72	36·98	28	44 9 39·91	39·55	39·60
	16	36·67			22	39·49		
	8	36·75			8	39·31		
	11	36·79			5	38·17		
	22	36·66			—	—		
α Cygni	37	20 36 18·94	18·82	19·15	40	45 15 12·90	12·75	12·29
	16	18·92			27	12·41		
	33	18·83			48	12·49		
	60	18·70			75	13·00		
	41	18·85			40	12·59		
12 Canum Venat.	28	12 48 59·95	59·93	60·19	28	50 52 14·02	14·03	13·80
	31	59·90			30	14·01		
	26	59·96			23	13·92		
	6	59·98			2	14·63		
	21	59·89			26	14·21		
α Lyræ	27	18 31 51·41	51·30	51·58	30	51 21 11·87	11·73	10·90
	23	51·30			29	11·24		
	46	51·35			60	11·65		
	77	51·25			90	11·90		
	46	51·27			37	11·72		
61¹ Cygni	18	21 0 10·38	10·31	10·61	19	51 59 8·99	8·50	7·28
	11	10·34			12	8·24		
	14	10·25			14	8·20		
	15	10·25			19	8·27		
	8	10 30			10	8·72		
β Lyræ	13	18 44 32·33	32·31	32·52	14	56 48 30·99	30·45	30·35
	13	32·34			14	30·24		
	5	32·25			—	—		
	42	32·29			37	30·34		
	18	32·36			9	30·39		
α² Geminorum	59	7 25 1·07	1·06	1·31	58	57 47 17·41	17·28	16·79
	53	1·09			59	17·30		
	56	1·08			58	17·07		
	46	1·04			46	17·20		
	63	1·04			46	17·39		
ζ Cygni	19	21 6 33·04	33·02	33·25	19	60 23 10·27	9·58	9·34
	12	33·02			12	8·96		
	29	32·93			27	9·38		
	28	33·04			26	9·64		
	18	33·11			14	9·46		
β Tauri	59	5 16 48·54	48·58	48·81	62	61 31 29·03	28·85	29·65
	37	48·55			41	28·81		
	38	48·64			34	28·35		
	66	48·57			47	28·99		
	42	48·62			14	28·87		
β Geminorum	63	7 36 7·55	7·61	7·82	58	61 36 58·86	58·71	58·90
	57	7·58			65	58·85		
	68	7·63			70	58·67		
	64	7·62			52	58·67		
	96	7·63			65	58·52		

Names.	Mean Right Ascension, January 1st, 1850. No. of Observations.	Observations in 1848–1852. h.	m.	s.	Mean. s.	Greenwich 12 yr. Catalogue, 1845. s.	Mean North Polar Distance, January 1st, 1850. No. of Observations.	Observations in 1848–1852. °	′	″	Mean. ″	Greenwich 12 yr. Catalogue, 1845. ″
α Andromedæ	11	0	0	38·43	38·42	38·59	10	61	44	15·83	15·56	16·51
	28			38·41			26			15·64		
	47			38·38			53			15·43		
	60			38·42			34			15·55		
	54			38·45			20			15·66		
ε Bootis	25	14	38	25·91	25·95	26·16	22	62	17	26·93	26·73	27·35
	26			25·90			27			26·40		
	26			25·95			23			26·76		
	18			26·01			10			27·20		
	25			26·00			16			26·65		
α Cor. Bor.	24	15	28	20·00	20·04	20·29	22	62	46	38·83	38·44	39·05
	26			20·03			27			37·82		
	36			20·07			29			38·71		
	52			20·03			46			38·52		
	35			20·06			28			38·34		
ε Leonis	54	9	37	19·43	19·50	19·71	51	65	32	15·22	15·09	16·36
	49			19·47			46			14·78		
	36			19·55			36			15·10		
	26			19·54			11			15·22		
	42			19·57			31			15·27		
η Tauri	38	3	38	34·40	34·42	34·56	35	66	21	45·93	45·98	46·94
	26			34·41			29			45·74		
	32			34·46			32			46·02		
	47			34·39			42			46·21		
	34			34·47			12			45·56		
α Arietis	40	1	58	43·45	43·49	43·69	34	67	14	57·54	57·28	58·08
	27			43·42			27			57·55		
	39			43·49			34			57·28		
	57			43·51			29			57·06		
	40			43·57			20			56·81		
μ Geminorum	53	6	13	52·93	52·93	53·15	56	67	24	52·70	52·64	53·23
	48			52·91			54			52·61		
	32			52·89			38			52·58		
	54			52·95			43			53·04		
	14			52·95			21			51·86		
δ Geminorum	54	7	11	9·43	9·47	9·69	50	67	44	47·18	47·00	47·52
	39			9·41			43			46·85		
	27			9·48			27			47·44		
	43			9·50			38			46·64		
	48			9·51			38			47·00		
δ Leonis	47	11	6	7·25	7·31	7·47	45	68	39	18·05	18·08	19·36
	45			7·27			39			18·19		
	34			7·34			29			17·74		
	12			7·36			4			18·35		
	33			7·39			23			18·35		
α Bootis	35	14	8	49·00	49·08	49·27	34	70	2	4·36	4·14	4·00
	52			49·05			62			3·75		
	41			49·10			45			4·15		
	55			49·11			50			4·19		
	45			49·14			37			4·51		

Names.	Mean Right Ascension, January 1st, 1850. No. of Observations.	Observations in 1848–1852.			Mean.	Greenwich 12 yr. Catalogue, 1845.	Mean North Polar Distance, January 1st, 1850. No. of Observations.	Observations in 1848–1852.			Mean	Greenwich 12 yr Catalogue, 1845.
		h.	m.	s.	s.	s.		°	′	″	″	″
η Bootis	33	13	47	32·31	32·40	32·55	30	70	50	54·37	54·08	54·32
	33			32·34			37			53·73		
	10			32·38			10			54·02		
	28			32·53			17			54·03		
	25			32·46			22			54·34		
α Tauri	59	4	27	18·97	18·99	19·14	64	73	47	48·50	48·48	49·46
	52			18·98			58			48·32		
	65			19·00			62			48·49		
	64			18·97			55			48·37		
	61			19·02			35			48·89		
β Leonis	39	11	41	24·16	24·20	24·29	43	74	35	22·09	22·00	22·46
	53			24·12			59			21·69		
	43			24·21			39			22·35		
	23			24·31			9			22·43		
	40			24·27			29			21·91		
α Herculis	12	17	7	48·42	48·45	48·54	14	75	26	4·71	4·40	4·64
	22			48·42			23			4·02		
	38			48·41			27			4·07		
	55			48·42			39			4·81		
	38			48·54			15			4·21		
α Pegasi	16	22	57	17·40	17·46	17·52	17	75	36	1·60	1·20	3·12
	10			17·42			9			1·17		
	45			17·46			34			1·05		
	49			17·47			26			1·24		
	21			17·48			7			0·84		
γ Pegasi	13	0	5	30·84	30·95	31·00	11	75	39	0·63	0·50	2·02
	11			30·91			15			0·38		
	24			30·89			20			0·43		
	54			30·96			26			0·47		
	44			31·01			6			0·86		
ζ Aquilæ	14	18	58	30·88	30·86	30·91	15	76	21	20·34	20·10	19·89
	6			30·80			8			19·69		
	15			30·86			12			20·03		
	44			30·84			28			20·26		
	16			30·90			11			19·96		
α Leonis	63	10	0	22·58	22·66	22·74	58	77	18	5·51	5·25	6·85
	66			22·61			59			5·11		
	29			22·67			30			5 03		
	39			22·73			17			5·40		
	61			22·76			53			5·21		
α Ophiuchi	10	17	27	58·24	58·29	58·37	16	77	19	35·18	34·75	35·88
	13			58·23			12			34·50		
	42			58·26			32			34·75		
	55			58·33			43			34·57		
	30			58·31			26			34·77		
γ Aquilæ	15	19	39	7·60	7·59	7·69	17	79	44	54·99	54·43	54·50
	8			7·57			7			54·12		
	39			7·59			22			54·94		
	79			7·60			62			54·28		
	49			7·57			25			53·98		

Names.	Mean Right Ascension, January 1st, 1850						Mean North Polar Distance, January 1st, 1850.					
	No. of Observations.	Observations in 1848–1852.			Mean.	Greenwich 12 yr. Catalogue, 1845.	No. of Observations.	Observations in 1848–1852.			Mean.	Greenwich 12 yr. Catalogue, 1845.
		h.	m.	s.	s.	s.		°	′	″	″	″
	19	22	33	58·86			18	79	57	0·80		
	15			58·88			15			0·40		
ζ Pegasi	20			58·90	58·88	58·90	17			0·34	0·52	0·53
	16			58·87			3			1·04		
	16			58·87			8			0·26		
	20	21	36	49·06			22	80	48	37·95		
	11			49·13			12			37·21		
ε Pegasi	22			49·07	49·05	49·12	21			37·08	37·46	35·99
	24			49·05			18			37·62		
	20			48·99			16			37·29		
	40	19	43	27·83			43	81	31	26·50		
	22			27·75			26			26·03		
α Aquilæ	47			27·81	27·79	27·81	47			26·26	26·28	26·30
	110			27·77			110			26·25		
	58			27·79			20			26·30		
	63	5	47	3·05			60	82	37	31·11		
	49			3·04			52			30·94		
α Orionis	54			3·08	3·06	3·15	60			31·20	31·25	32·78
	79			3·11			59			31·79		
	63			3·02			38			31·14		
	46	8	38	49·72			51	83	2	1·96		
	44			49·73			42			2·48		
ε Hydræ	33			49·81	49·75	49·79	34			2·40	2·38	3·68
	24			49·73			23			2·72		
	31			49·77			34			2·61		
	23	15	36	52·85			19	83	5	55·70		
	22			52·87			17			55·35		
α Serpentis	28			52·92	52·88	52·96	27			55·07	55·37	55·75
	40			52·90			33			55·52		
	37			52·87			28			55·25		
	14	19	47	56·64			15	83	57	50·88		
	5			56·62			6			50·25		
β Aquilæ	9			56·59	56·68	56·68	3			50·37	50·50	51·30
	59			56·71			44			50·55		
	19			56·70			12			49·98		
	67	7	31	26·87			66	84	23	39·03		
	51			26·87			58			39·42		
α Canis Minoris	59			26·89	26·89	26·85	55			38·93	39·05	39·36
	69			26·90			55			39·07		
	97			26·91			72			38·85		
	6	23	32	14·08			7	85	11	10·11		
	20			14·15			20			9·30		
ι Piscium	25			14·27	14·18	14·37	21			8·81	9·13	10·66
	20			14·16			13			9·33		
	24			14·16			19			8·81		
	42	2	54	26·59			35	86	30	6·34		
	23			26·63			23			6·03		
α Ceti	26			26·63	26·60	26·58	23			6·09	5·85	7·56
	63			26·61			47			5·56		
	42			26·58			22			5·22		

Names.	Mean Right Ascension, January 1st, 1850. No of Observations.	Observations in 1848–1852.	Mean.	Greenwich 12 yr Catalogue, 1845.	Mean North Polar Distance, January 1st, 1850. No. of Observations	Observations in 1848–1852.	Mean.	Greenwich 12 yr. Catalogue, 1845.
		h. m. s.	s.	s.		° ′ ″	″	″
δ Aquilæ	16	19 17 56·16	56·10	56·09	17	87 10 47·92	47·72	48·28
	11	56·12			11	47·19		
	9	56 06			11	47·39		
	47	56·06			46	47·92		
	17	56·16			8	47·29		
γ Ceti	33	2 35 31·93	32·01	31 94	24	87 23 55·93	56·02	57·87
	15	32·01			26	56·09		
	24	32·03			25	56·31		
	52	32·06			29	55·63		
	23	31·99			10	56·36		
δ Orionis	28	5 24 20·77	20·75	20·72	30	90 24 52·42	51·76	53·10
	25	20·73			24	51·82		
	20	20·75			19	51 62		
	46	20·75			33	51·43		
	38	20·75			11	51·07		
α Aquarii	12	21 58 4·73	4·73	4·67	12	91 2 45·69	45·88	47·12
	15	4·72			15	45·67		
	39	4·73			25	45·85		
	24	4·77			9	46·51		
	21	4·72			11	45·91		
ε Orionis	27	5 28 36·29	36·30	36·25	30	91 18 6·71	6·19	8·24
	14	36 26			15	5·96		
	18	36·33			20	5·99		
	41	36·30			32	6·19		
	40	36·31			12	6·08		
δ Ophiuchi	14	16 6 29·32	29·34	29·35	13	93 18 14·04	13·83	14·32
	10	29·34			11	13·65		
	19	29·34			16	13·51		
	25	29·36			22	14·28		
	7	29·34			6	13·37		
β Aquarii	11	21 23 39·75	39·71	39·53	11	96 13 41·73	41·45	41·60
	1	39·77			2	41·34		
	27	39·70			21	41·62		
	17	39·64			18	41·45		
	18	39·75			12	40·94		
α Hydræ	34	9 20 13·12	13·17	12·97	31	98 0 38·48	38·45	40·28
	33	13·12			38	38·13		
	22	13·21			22	38·32		
	36	13·15			13	38·45		
	37	13·27			30	38·92		
β Orionis	25	5 7 20·00	20·02	19·88	28	98 22 43·70	43·54	44·91
	34	20·07			33	43·45		
	40	20·04			39	43·67		
	66	20·01			59	43·36		
	35	19·96			21	43·70		
β Libræ	22	15 8 56·56	56·58	56·49	17	98 49 32·99	31·95	33·17
	21	56·60			20	31·99		
	21	56·49			15	32·05		
	23	56·66			20	31·31		
	15	56·60			10	31·24		

Names.	Mean Right Ascension, January 1st, 1850. No of Observations.	Observations in 1848–1852. h.	m.	s.	Mean. s.	Greenwich 12 yr. Catalogue, 1845. s.	Mean North Polar Distance, January 1st, 1850. No. of Observations	Observations in 1848–1852. °	′	″	Mean. ″	Greenwich 12 yr. Catalogue, 1845. ″
θ^1 Ceti	23	1	16	31·75	31·74	31·60	23	98	57	32·52	31·49	32·48
	23			31·70			27			30·94		
	23			31·77			23			31·25		
	26			31·74			21			31·38		
	11			31·74			9			31·36		
α Virginis	37	13	17	17·97	17·94	17·80	33	100	22	35·01	34·50	36·28
	45			17·91			50			34·19		
	30			17·92			42			34·63		
	32			17·99			30			34·34		
	28			17·91			35			34·46		
α^2 Capricorni	13	20	9	43·91	43·87	43·71	12	103	0	20·86	20·06	20·58
	—			—			2			20·68		
	19			43·83			19			19·70		
	25			43·89			20			19·70		
	9			43·83			8			20·42		
γ^1 Eridani	44	3	51	2·18	2·20	1·91	40	103	56	18·59	18·74	19·76
	24			2·22			26			18·55		
	34			2·24			38			18·93		
	34			2·20			40			18·85		
	9			2·12			2			18·66		
δ Hyd. et Crat.	48	11	11	50·88	50·92	50·66	46	103	58	1·75	1·83	3·04
	47			50·90			36			1·79		
	30			50·93			28			2·05		
	11			50·95			2			2·41		
	27			51·01			24			1·73		
α^2 Libræ	30	14	42	35·48	35·47	35·32	23	105	24	54·92	54·17	54·21
	23			35·47			22			54·19		
	12			35·42			11			54·11		
	22			35·47			12			53·97		
	15			35·47			15			53·19		
α Canis Majoris	72	6	38	32·57	32·50	32·43	70	106	30	49·16	48·71	49·47
	69			32·50			79			48·75		
	70			32·53			83			48·67		
	80			32·45			63			48·80		
	47			32·44			47			48·16		
α Leporis	25	5	26	7·11	7·12	6·98	24	107	55	60·17	60·00	60·66
	18			7·14			23			59·85		
	11			7·17			10			60·39		
	12			7·08			12			60·01		
	4			7·00			3			59·39		
β Ceti	17	0	36	3·62	3·68	3·44	19	108	48	38·05	37·83	38·77
	11			3·54			12			37·58		
	37			3·75			35			37·71		
	35			3·64			22			37·99		
	30			3·72			14			37·77		
β^1 Scorpii	15	15	56	43·42	43·42	43·35	12	109	23	25·96	25·00	24·93
	9			43·49			10			25·51		
	24			43 47			16			24·92		
	37			43·38			31			24·54		
	11			43·40			7			24·85		

Names.	Mean Right Ascension, January 1st, 1850. No. of Observations.	Observations in 1848–1852.	Mean.	Greenwich 12 yr. Catalogue, 1845.	Mean North Polar Distance, January 1st, 1850. No of Observations	Observations in 1848–1852.	Mean.	Greenwich 12 yr. Catalogue, 1845.
		h. m. s.	s.	s.		° ′ ″	″	″
μ^1 Sagittarii......	19	18 4 47·85	47·77	47·62	22	111 5 33·59	32·72	33·35
	8	47·84			7	32·55		
	17	47·79			15	32·52		
	28	47·67			26	32·33		
	7	47·80			8	32·14		
β Corvi.........................	27	12 26 31·14	31·18	31·00	26	112 33 58·36	58·24	59·84
	36	31·17			29	58·20		
	36	31·19			37	58·52		
	11	31·26			3	59·01		
	17	31·17			27	57·70		
15 Argus..	54	8 1 9·65	9·63	9·43	51	113 52 29·99	29·33	29·94
	51	9·59			56	29·28		
	21	9·69			24	29·73		
	34	9·60			32	29·26		
	34	9·65			29	28·58		
α Scorpii...........	18	16 20 13·18	13·16	13·09	17	116 5 38·73	37·74	38·88
	28	13·27			24	37·52		
	47	13·17			46	37·55		
	57	13·13			54	36·83		
	46	13·12			28	37·49		
ε Canis Majoris.............	40	6 52 44·09	44·08	43·92	39	118 46 16·31	15·71	16·95
	50	44·09			57	15·83		
	37	44·10			39	15·97		
	66	44·09			50	15·66		
	55	44·03			48	14·94		
α Piscis Aust.................	17	22 49 21·34	21·33	21·09	16	120 24 56·21	56·07	56·76
	2	21·35			5	56·40		
	34	21·37			37	56·20		
	55	21·29			39	55·84		
	25	21·34			13	56·12		
α Columbæ....	53	5 34 13·56	13·40	13·13	54	124 9 24·87	25·12	27·27
	34	13·39			37	25·51		
	35	13·38			37	25·06		
	44	13·31			35	25·22		
	23	13·30			4	24·39		
α Gruis..........................	10	21 58 45·70	45·65	45·36*	9	137 41 4·76	4·19	3·20*
	1	45·91			5	4·65		
	1	45·78			1	3·43		
	5	45·46			5	3·03		
	—	—			1	3·48		
α Argus........	20	6 20 37·65	37·55	37·48	29	142 36 56·54	55·67	55·63
	15	37·69			15	55·06		
	2	37·67			5	55·48		
	30	37·41			9	54·99		
	15	37·53			5	53·86		
α Pavonis........	7	20 13 45·18	45·08	45·16	7	147 12 35·33	34·63	35·18
	2	45·35			2	35·38		
	4	44·87			1	34·27		
	11	45·05			12	33·94		
	5	45·03			7	34·96		

* The places of this and the following Stars, are taken from the Nautical Almanac for 1850.

Names.	Mean Right Ascension, January 1st, 1850.						Mean North Polar Distance, January 1st, 1850.					
	No. of Observations.	Observations in 1848–1852.			Mean.	Nautical Almanac.	No. of Observations.	Observations in 1848–1852.			Mean.	Nautical Almanac.
		h.	m.	s.	s.	s.		°	′	″	″	″
α Eridani	27	1	32	7·43	7·50	7·30	28	147	59	59·92	59·92	60·17
	10			7·76			3			59·73		
	14			7·75			18			60·25		
	45			7·43			24			59·78		
	24			7·47			14			59·75		
ι Argus	44	9	13	4·84	4·79	4·51	44	148	38	49·74	49·38	48·80
	36			4·81			40			49·05		
	32			4·87			35			49·32		
	27			4·55			15			48·84		
	23			4·83			23			49·70		
η Argus	40	10	39	15·55	15·51	15·22	36	148	53	48·51	48·20	47·87
	58			15·56			47			47·85		
	20			15·45			20			48·08		
	17			15·27			6			49·79		
	42			15·53			33			48·15		
β Centauri	27	13	53	17·53	17·46	17·20	23	149	38	45·20	44·37	45·69
	30			17·58			32			44·34		
	10			17·43			9			44·24		
	21			17·27			17			43·78		
	15			17·39			13			43·86		
α² Centauri	21	14	29	27·87	27·62	27·78	16	150	12	43·81	43·80	37·85
	35			27·87			29			43·61		
	24			27·58			29			43·74		
	42			27·41			29			43·15		
	20			27·39			12			45·70		
α¹ Crucis	28	12	18	17·98	17·91	17·54	27	152	15	61·33	61·02	59·44
	37			18·08			29			60·98		
	36			17·90			28			59·93		
	13			17·50			6			61·74		
	25			17·82			21			61·91		
α Trianguli Aust	3	16	32	50·16	50·24	50·11	4	158	44	32·27	33·89	35·28
	8			50·32			9			34·73		
	—			—			—			—		
	2			50·05			2			33·36		
	—			—			—			—		

OBSERVATIONS

OF

144 DOUBLE OR MULTIPLE STARS,

MADE AT THE

MADRAS OBSERVATORY,

WITH THE

LEREBOURS EQUATORIAL,

IN

1850—52.

N. B.—The references in the column of Synonyms are as follow:—S refers to the Observations by Sir J. South, and H & S to those by Herschel and South, published in the Phil. Trans. for 1824 and 26; B to the Brisbane Catalogue of Southern Stars; Δ to Dunlop's Catalogue of 253 double Stars, Mem. Ast. Soc. Vol III., h to the various Catalogues of Observations by Sir J. Herschel published in Mem. Ast. Soc., and in his "Results of Observations at the Cape of Good Hope," Σ to the second or great Dorpat Catalogue; j to the Poona Catalogue, published in 17th Vol. Mem. Ast. Soc. In the columns of weights and magnitudes an accent signifies an additional half.

Reference Number.	Synonym.	A. R. 1850·0.	N. P. D. 1850·0.	Position Angle.	Weight.	No. of Observations.	Magnifying Power.	Distance.	Weight.	No. of Observations.	Magnifying Power.	Magnitudes.	Date.	Remarks.
		h. m.	° ′	° ′				″						
1	h 1957	0 14	113 50	21 37	3	5	200	6·24	2	6	200	7′—9′	1850·970	Both yellowish.
2	—	—	—	20 14	3	5	123	6·01	2	6	123	—	— ·984	
3	β Tucani	25	153 47	171 10	4	5	123	27·32	2′	6	123	5 —5	1850·957	Both white.
4	—	—	—	171 20	4	5	200	27·33	2	6	200	—	— ·960	
5	h 3375	26·4	125 48	165 21	6	5	200	6·11	3′	6	200	7 —9	1850·951	A yellow, B bluish.
6	—	—	—	165 42	4′	5	—	6·31	2′	6	—	—	— ·957	
7	η Cassiopeæ	40	32 59	103 59	6′	6	200	8·36	5	*12	200	4 —9	1850·617	A yellow, B purple.
8	—	—	—	104 27	5′	5	—	7·85	3	6	—	—	— ·637	
9	—	—	—	105 29	6	5	—	8·15	2′	6	—	—	— ·957	
10	—	—	—	106 50	5′	5	123	8·30	2′	6	123	—	1851·091	
11	—	—	—	107 10	6	5	—	8·05	3	6	—	—	— ·096	
12	—	—	—	104 50	4	5	200	8·20	2′	6	200	—	— ·738	
13	—	—	—	107 18	6	5	—	8·04	3′	6	—	—	— ·899	
14	—	—	—	106 33	5′	5	—	7·95	4	6	—	—	— ·980	
15	j 6	50	109 49	239 18	2	5	200	3·09	1′	6	200	6′—10′	1850·984	
16	—	—	—	239 42	2′	5	—	3·37	1	6	—	—	1851·000	
17	S 390	51	106 28	34 14	4′	5	200	6·36	2′	6	200	7′—7′	1850·960	Nearly equal.
18	—	—	—	35 41	4′	5	—	6·37	3	6	—	—	1851·000	
19	S 391	52	90 0	305 45	3′	5	200	18·69	2	6	200	8 —10	1851·732	
20	—	—	—	306 2	5	5	—	19·06	2	6	—	—	— ·815	
21	S 392	57	96 16	166 43	4	5	123	11·96	2′	6	123	8′—9	1851·104	
22	—	—	—	166 55	3	5	—	11·67	2	6	—	—	— ·124	
23	h 3416	57	150 54	130 29	3′	5	200	4·68	2	6	200	8′—8′	1850·970	
24	—	—	—	127 32	3	5	—	4·79	2	6	—	8 —8	— ·984	
25	ζ Phœnicis	1 2	146 4	242 15	3	5	200	6·21	2′	6	200	5′—9′	1851·000	
26	—	—	—	242 14	3	5	123	6·60	2′	6	123	—	— ·003	
27	S 396	6	98 25	339 47	3	5	123	20·81	1′	6	123	7—10′	1851·005	
28	—	—	—	338 54	3	5	—	21·20	1′	6	—	—	— ·025	
29	h 2036	12	106 36	40 0	3′	5	200	1·82	1′	6	200	7 —7′	1851·828	
30	—	—	—	41 19	3′	5	—	1·95	2	6	—	—	— ·973	
31	h 3447	29	120 43	82 29	3	5	200	2·41	2	6	200	5′—7′	1851·025	A white, B blue.
32	—	—	—	82 33	3′	5	—	2·84	2	6	—	—	— ·033	
33	p Eridani	34	146 58	268 44	3	5	200	4·29	2′	6	200	6′—6′	1850·637	Heavy dew.
34	—	—	—	267 38	3	5	—	4·16	2′	6	—	—	— ·651	
35	—	—	—	269 59	2′	5	—	4·27	2′	6	—	—	— ·826	
36	—	—	—	268 45	5′	5	—	4·48	4	6	—	—	— ·951	
37	—	—	—	266 23	4′	5	—	4·30	3	6	—	—	1851·792	
38	h 3475	1 51	151 4	45 17	2	3	200	2·5	estimated.			7 —7′	1851·025	Both yellow.
39	—	—	—	42 5	2′	4	—	—	—	—	—	7′—8	— ·033	
40	H & S 24 ?	53	113 40	124 28	6	6	123	7·83	3	6	123	7 —7	1851·044	
41	—	—	—	123 54	4	5	—	7·79	3	6	—	—	— ·063	
42	α Piscium	54·3	87 58	329 26	4	5	200	3·61	2′	6	200	5′—5′	1850·957	

4 Stars flaring.
7 Definition excellent—Wind Light S.W.
15 Difficult, B seen only by fits—sky hazy.
17 Position may be 214°.
24 Stars crawling.
38 Stars moulding.
39 Crawling and faint.

* Distance measured by repetition.

Reference Number.	Synonym.	A. R. 1850·0.	N. P. D. 1850·0.	Position Angle.	Weight.	No. of Observations.	Magnifying Power.	Distance.	Weight.	No. of Observations.	Magnifying Power.	Magnitudes.	Date.	REMARKS.
		h. m.	° ′	° ′				″						
43	α Piscium	1 54·3	87 58	329 32	4	5	200	3·81	2′	6	200	5′—5′	1850·960	
44	*Continued*	—	—	329 22	6	6	—	3·57	3	6	—	—	— ·967	
45	—	—	—	329 7	4′	5	—	3·43	3′	6	—	5′—6	1851·732	
46	—	—	—	329 20	4	5	—	3·55	3	6	—	—	— ·793	
47	j 21 AB	2 7	123 0	281 23	3	5	123	6·16	2	6	123	7 —10′	1851·044	A orange, B blue.
48	—	—	—	279 59	3	5	—	6·23	2	6	—	—	— ·071	
49	AC	—	—	182 22	3	2	—	180·	estimated.			7 —	1851·071	
50	S 412	19	106 3	293 8	4′	5	123	11·67	2	6	123	6 —10	1851·101	
51	—	—	—	292 19	3	5	200	11·11	2	6	200	—	— ·104	
52	h 3504	23	121 3	269 22	3′	5	123	6·42	2′	6	123	7′—8	1851·074	
53	—	—	—	269 5	3′	5	200	5·87	2	6	200	8′—9	— ·080	
54	h 3527	37	131 9	45 48	3	5	200	1·6	estimated.			7′—7′	1851·033	Nearly equal.
55	—	—	—	44 13	3	5	—	1·4	estimated.			—	— ·044	
56	⊿ 8	51	115 35	220 57	6	5	200	27·43	2	6	200	7′—7′	1851·033	
57	—	—	—	221 59	4′	5	—	27·97	2	4	—	7 —7′	— ·044	
58	θ Eridani	52	130 52	81 40	3	3	200	8·20	3′	6	200	3 —4	1851·722	
59	—	—	—	81 13	4	4	—	8·16	3	6	—	—	— ·724	
60	—	—	—	—	—	—	—	8·00	3′	6	—	—	— ·725	} Day light.
61	—	—	—	81 42	2	2	200	7·87	3′	6	—	—	— ·740	
62	—	—	—	83 22	3	3	—	8·11	3	6	—	—	— ·751	
63	—	—	—	82 46	4′	5	—	8·40	3′	6	—	3′—4′	— ·793	Both yellow.
64	—	—	—	83 5	4′	5	—	8·08	2′	6	—	—	— ·815	
65	12 Eridani	3 6	119 35	310 3	3	5	200	3·35	3	6	200	4′—7	1851·080	
66	—	—	—	307 1	4	5	—	3·46	2	6	—	—	— ·096	
67	h 3556	7	134 59	232 56	3	5	200	2·48	1′	6	200	6 —10	1851·101	A white, B reddish.
68	—	—	—	228 49	3	5	123	2·40	1′	6	123	—	— ·115	
69	—	—	—	229 22	2	3	200	—	—	—	—	—	— ·115	
70	S 431	29	89 54	236 25	4	5	123	6·06	2′	6	123	6′—8′	1851·041	
71	—	—	—	238 43	4	5	—	6·40	1′	6	—	6 —8′	— ·071	
72	h 3596	43	122 15	135 47	4	5	123	8·63	2′	6	123	8 —8	1851·044	
73	—	—	—	136 29	5	5	—	8·62	3	6	—	—	— ·074	
74	32 Eridani	46	93 20	347 56	4′	5	123	6·83	2′	6	123	6 —7	1851·041	
75	—	—	—	347 4	4	5	200	6·69	3	6	200	—	— ·080	
76	h 3622	59	126 17	112 3	3′	5	123	9·87	2	6	123	9 —10	1851·115	
77	—	—	—	111 44	3	5	—	9·62	1′	6	—	—	— ·124	
78	h 3632	4 9	120 28	165 22	3	5	123	10·90	2′	6	123	7′—10	1850·998	A white, B blue.
79	—	—	—	163 2	3	5	—	10·62	2	6	—	—	1851·000	
80	—	—	—	165 9	3	5	—	10·41	2′	6	—	7 —10′	— ·074	
81	h 3634	11	135 1	329 35	1′	5	123	10·	estimated.			10—10′	1851·151	
82	—	—	—	331 0	3	5	—	11·20	2	6	123	—	— ·157	

43 Taken with diagonal prism.
54 Barely separated.
55 In contact.
56 Sky hazy.
58 Definition excellent.
68 B. seen plainly with 123, but, with 200, only by glimpses.
78 Rather difficult, B. being frequently obscured by light clouds.
81 The stars will not bear illumination; the observation was taken on the thick wire.
82 Tolerably distinct, the full aperture being used.

Reference Number.	Synonym.	A. R. 1850·0	N.P.D. 1850·0.	Position Angle.	Weight.	No. of Observations.	Magnifying Power.	Distance.	Weight.	No. of Observations.	Magnifying Power.	Magnitudes.	Date.	Remarks.
		h. m.	° ′	° ′				″						
83	h 3642	4 14	124 16	160 47	4	5	200	6·06	3	6	200	6 —9′	1851·083	
84	—	—	—	158 30	2′	5	—	5·86	2	6	—	—	— ·101	
85	θ Tauri	20	74 22	166 2	2′	3	200	339·32*	1′	4	200	5 —5′	1851·722	
86	—	—	—	— 7	2	2	—	338·23*	2	4	—	—	— ·722	Day light.
87	—	—	—	— 6	4	3	—	338·78	2′	5	—	—	— ·725	
88	—	—	—	— 4	3′	3	123	338·69	2	4	123	—	— ·739	Day light.
89	—	21·3	147 25	231 38	4′	5	123	6·59	3	6	123	6 —6′	1851·074	
90	—	—	—	231 25	4′	5	—	6·51	3	6	—	6′—7	— ·083	
91	Σ 570	28	100 4	258 59	5	5	200	13·05	2	6	200	6′—7	1851·101	Both white.
92	—	—	—	259 16	6	5	123	12·89	2′	6	123	6 —6′	— ·121	
93	—	—	—	259 12	4	5	—	13·17	2	6	—	—	— ·124	
94	55 Eridani	36·4	99 5	316 28	5	5	200	9·22	4	6	200	6 —6	1851·121	Both white, nearly equal.
95	—	—	—	316 6	4′	5	—	9·10	3	6	—	—	— ·143	
96	B. A. C. 1573	59	125 41	315 40	3′	5	—	3·08	1′	6	200	5 —9	1850·998	
97	—	—	—	315 17	3	5	—	3·22	1′	6	—	—	1851·001	
98	h 3745	5 13	124 11	166 3	3′	5	200	13·22	2	6	123	7—10′	1851·033	
99	—	—	—	168 0	2′	5	123	13·62	1	4	—	7′—11	— ·080	
100	h 3752 AB	16	114 55	107 43	3	5	200	3·11	2	6	200	6 —8	1851·074	
101	—	—	—	107 29	4′	5	—	2·85	2	6	—	—	— ·083	
102	AC	—	—	106 0	2	2	—	60·	estimated.			6 —9	1851·074	
103	—	—	—	105 58	2	2	—	59·31	1	2	200	—	— ·083	
104	h 3760	21	125 30	221 51	3	5	200	7·50	2′	6	200	8 —8′	1851·102	
105	—	—	—	220 6	3	5	—	7·50	2	6	—	8′—9	— ·143	Hazy.
106	λ Orionis	27	80 10	42 26	4	5	200	4·80	2	6	200	4′—7	1851·042	
107	—	—	—	42 34	3	5	—	4·56	2′	6	—	—	— ·104	
108	h 3777	30·8	145 1	349 10	3	5	123	50·56	2	6	123	6′—12	1851·162	
109	—	—	—	349 59	3	5	—	50·43	2	6	—	—	— ·170	
110	np. σ Orionis	31	92 40	267 18	5	5	200	8·59	2	6	200	8 —8	1851·170	
111	—	—	—	268 10	4	5	123	8·02	2	6	123	—	— ·173	
112	ζ Orionis	33	92 2	152 4	4′	5	200	2·90	2	6	200	2 —7	1851·178	
113	—	—	—	152 14	3′	5	—	2·38	2	6	—	—	— ·187	
114	h 3789	35·5	140 14	1 39	4	5	123	9·11	3′	6	123	7′—8	1851·034	
115	—	—	—	359 42	3	5	200	8·74	3	6	200	8 —9	— ·083	
116	S 497	38	94 19	89 7	3′	5	200	7·23	2′	6	200	6′—9′	1851·195	A yellow, B blue.
117	—	—	—	87 2	3	5	—	6·96	2	6	—	—	— ·197	
118	S 499	40	83 36	199 38	3	5	200	1·5	estimated.			6′—6′	1851·039	Both orange.
119	—	—	—	202 18	3	4	—	1·78	1	4	200	—	— ·042	
120	S 504	52	110 10	255 0	3	5	200	3·48	1′	6	200	9′—9′	1851·156	
121	—	—	—	253 11	3′	5	—	3·67	2	6	—	9 —9	— ·186	
122	—	—	—	252 56	3	5	—	—	—	—	—	—	— ·192	

85 *Observed diff. decn. 329″·24.
86 *Observed diff. decn. 328″·18.
99 B. seen by glimpses.
108 Taken with full aperture; will scarcely bear illumination.
110 This is the pair marked D.E. in Smith's Cycle.
112 Taken with triangular aperture.
113 do. do.
118 Barely divided, nearly equal.
120 Taken with full aperture; blazy.
121 Triangular aperture.

Reference Number.	Synonym.	A. R. 1850·0.	N. P. D. 1850·0.	Position Angle.	Weight.	No. of Observations.	Magnifying Power.	Distance.	Weight.	No. of Observations.	Magnifying Power.	Magnitudes	Date.	REMARKS
		h. m.	° ′	° ′				″						
123	h 3823	5 55	121 4	130 26	3	5	200	4·13	2	6	200	8′—8′	1851·102	
124	—	—	—	130 38	3	5	—	3·82	1′	4	—	8 —8	— ·151	
125	⊿ 23	6 1	138 28	352 5	3	5	200	2·51	1′	6	200	7 —7′	1851·080	
126	—	—	—	354 4	3	5	—	2·48	2	6	—	—	— ·102	
127	j 60	14	119 33	207 51	4′	5	200	13·07	2	6	200	7′—10	1851·167	Both yellow.
128	—	—	—	207 27	4′	5	—	13·23	2′	6	—	—	— ·187	
129	AB	20	124 59	47 50	3′	3	200	127·84	1′	4	200	6′—8′	1851·121	
130	—	—	—	47 51	3′	3	—	—	—	—	—	6 —8	— ·157	
131	h 3858? BC	—	—	316 27	3′	5	—	3·66	2′	6	200	8′—9	— ·121	
132	—	—	—	317 13	4	5	—	3·69	2	6	—	8 —9	— ·157	
133	h 3860	21	130 53	225 46	3	5	200	8·73	2	6	200	7′—9	1851·167	
134	—	—	—	227 27	3	5	—	8·18	2	6	—	—	— ·187	
135	11 Monoc. AB	21	96 56	129 39	5′	5	200	7·32	3	6	200	5′—6′	1851·195	
136	—	—	—	130 36	5	5	—	7·35	3′	6	—	6 —6′	— ·197	
137	BC	—	—	102 51	4	5	—	2·71	3	6	—	6′—7	— ·195	
138	—	—	—	103 19	4	5	—	2·84	2	6	—	6′—6′	— ·197	
139	B.A.C. 2168	30	108 32	262 13	6	5	200	17·73	2′	6	200	6′—8′	1851·200	
140	—	—	—	262 3	6	5	—	17·56	2′	6	—	—	— ·209	
141	B.A.C. 2207	37	128 15	277 38	4	5	200	7·71	2′	6	200	6′—7′	1851·080	
142	—	—	—	276 48	4	5	—	8·24	2′	6	—	—	— ·102	
143	38 Gemin.	46	76 38	166 47	4	5	123	5·99	2′	6	123	6 —8′	1851·041	
144	—	—	—	169 21	4	5	200	6·01	2′	6	200	—	— ·162	
145	ζ Gemin.	55	69 13	352 56	6	4	123	92·27	3′	6	123	4 —7	1851·042	
146	—	—	—	352 26	5	5	—	92·73	2′	6	—	—	— ·104	
147	⊿ 39	7 1	148 57	76 18	3	5	123	2·69	2	6	123	6′—7	1850·294	
148	—	—	—	75 53	2	5	—	—	—	—	—	—	1851·080	
149	h 3950	13	111 46	346 21	4	5	200	4·09	3	6	200	8 —8	1851·211	Both orange, nearly equal.
150	—	—	—	346 48	5	5	—	3·99	2′	6	—	—	— ·220	
151	B.A.C. 2422	13	126 28	96 35	3	2	200	240·	estimated.			5 —5′	1851·206	
152	& 2425; AB	—	—	96 44	3	2	—	239·35	1	1	200	5′—6	— ·211	
153	BC	—	—	215 19	2	2	—	117·96	½	1	—	5′—10	— ·206	
154	—	—	—	215 32	4	3	—	117·50	½	1	—	6 —9′	— ·211	
155	CD	—	—	212 20	2′	5	—	3·0	estimated.			10—11	— ·206	
156	—	—	—	213 39	3	5	—	2·98	2	6	200	9′—10	— ·211	
157	h 3966	20	127 1	321 51	4′	5	200	7·28	3	6	200	6′—6′	1851·080	
158	—	—	—	323 35	5	5	—	7·02	3	6	—	—	— ·167	
159	Castor.	25	57 47	248 55	4′	5	95	5·03	1′	4	95	2 —3	1850·280	Day light.
160	—	—	—	248 1	3	5	123	—	—	—	—	—	— ·280	
161	—	—	—	248 15	5′	5	200	* 4·88	4	12	200	2 —2′	— ·750	
162	—	—	—	248 0	5	5	123	5·14	2	6	123	—	1851·162	

131 If this be *h* 3858, of which there can be little doubt, there would seem to be an error of 1° in Herschel's P D.

133 Sky hazy, and the measures rather wild.

145 Observed just before occultation by the Moon.

148 Sadly blurred, no measure of distance could be taken.

Q

* Distance measured by repetition.

Reference Number.	Synonym.	A. R. 1850·0	N. P. D. 1850·0.	Position Angle.	Weight.	No. of Observations.	Magnifying Power.	Distance.	Weight.	No. of Observations.	Magnifying Power.	Magnitudes	Date.	Remarks
		h. m.	° ′	° ′				″						
163	Castor	7 25	57 47	249 51	3	5	200	5·31	3	6	200	2′—2	1851·703	
164	*Continued.*	—	—	247 36	8	7	—	5·07	3	6	—	—	— ·703	Day light.
165	—	—	—	247 37	4	4	—	5·17	4	6	—	—	— ·722	
166	—	—	—	247 48	4	4	—	4·81	3′	6	—	—	— ·725	
167	—	—	—	247 26	5′	5	—	4·94	3′	6	—	—	— ·739	Day light.
168	—	—	—	248 19	5	5	—	5·05	3	6	—	—	— ·786	
169	B.A.C. 2511	30	104 9	302 30	3	5	200	7·11	2	6	200	7 —7	1851·220	
170	—	—	—	304 6	4	5	—	7·07	2′	6	—	—	— ·228	
171	h 4009	44	121 47	310 0	3	5	200	8·50	2	6	200	9 —9	1851·195	
172	—	—	—	310 17	4	5	—	8·65	1′	6	—	9 —9′	— ·206	
173	—	—	—	310 52	1′	3	—	8·76	2	6	—	9′—10	— ·209	
174	h 4031	56	150 27	356 25	4	5	123	5·58	2	6	123	7 —7′	— ·160	With full aperture.
175	—	—	—	357 14	3′	5	200	5·30	2	6	200	7′—8	— ·167	4 inch do.
176	⊿ 63	8 5	132 11	81 21	3′	5	200	5·96	2	6	200	7 —8′	1850·971	Both white.
177	—	—	—	81 41	3′	5	—	5·99	2′	6	—	—	1851·025	
178	γ Argus; AB	5	136 54	219 40	4	3	200	41·32	1′	4	200	2 —5′	1851·187	
179	—	—	—	219 25	3	3	—	40·97	1	4	—	2 —5	— ·206	
180	AC	—	—	151 15	4	3	—	61·93	2	4	—	5′—9	— ·187	
181	—	—	—	151 37	2′	3	—	61·53	1	2	—	5 —9	— ·206	
182	CD	—	—	122 20	2	3	—	34·43	1	4	—	9 —11	— ·187	
183	—	—	—	121 43	2	3	—	34·32	1	4	—	—	— ·206	
184	h 4069	10	135 23	253 24	6	5	200	33·06	3	6	200	5′—9	1851·025	
185	—	—	—	— 14	7	5	123	33·81	2′	6	123	—	— ·160	
186	—	—	—	— 41	4′	5	169	33·25	2	6	169	—	1852·391	With Dollond's Micromr.
187	B 1974; AB	14	134 34	326 5	3	5	200	5·28	2	6	200	9′—9′	1851·195	
188	—	—	—	— 30	3	5	—	5·55	2	6	—	9 —9′	— ·198	
189	BC	—	—	143 10	1	1	—	—	—	—	—	9′—10	— ·195	
190	—	—	—	— 30	1	1	—	—	—	—	—	0 —0	— ·198	
191	AC	—	—	142 50	1	1	—	77·61	½	1	200	9 —10	— ·198	
192	h 4093	21	128 34	122 26	5	5	200	8·18	3	6	200	6 —6′	1851·026	Both yellow.
193	—	—	—	123 26	4	5	123	8·02	3	6	123	6′—7	— ·162	Full aperture.
194	⊿ 70	24	134 14	348 40	3	5	200	4·74	2′	6	200	6′—8′	1851·195	
195	—	—	—	350 45	3′	5	—	4·54	2′	6	—	—	— ·209	
196	h 4107; AB	26	128 33	332 58	4	5	200	4·31	2	6	200	6′—8	1851·026	
197	—	—	—	327 39	4′	5	—	4·66	2	6	—	6′—8′	— ·162	Full aperture, blazy.
198	—	—	—	330 10	3′	5	—	4·38	2	6	—	—	— ·198	Triangular aperture.
199	AC	—	—	100 59	1	2	—	30·	estimated.			8 —10	— ·026	
200	—	—	—	101 30	3	3	—	31·65	1	2	200	8′—10	— ·162	Full aperture.
201	h 4128	36	149 47	218 40	2′	4	123	1·6	estimated.			7′—8	1850·294	A orange, B greenish.
202	—	—	—	221 43	2′	5	200	—	—	—	—	7′—8′	— ·336	
203	—	—	—	221 21	2	4	188	—	—	—	—	—	— ·338	With Troughton's Micromr.
204	B.A.C. 2986	42	148 10	293 5	3	5	200	3·69	2	6	200	7′—8	1851·187	
205	—	—	—	288 19	2′	5	—	4·38	1′	6	—	8 —8′	— ·209	
206	—	—	—	293 16	2′	4	169	4·	estimated.			8 —8	1852·394	With Dollond's Micromr

169 In a loose cluster.

174 On S. edge of a large loose cluster; a bright star follows: viz. 2687 B.A.C.

Reference Number.	Synonym.	A. R. 1850·0	N P D 1850·0	Position Angle.	Weight	No. of Observations.	Magnifying Power	Distance.	Weight.	No. of Observations	Magnifying Power.	Magnitudes	Date.	Remarks.
		h. m.	° ′	° ′				″						
207	sf 3009B.A.C.	8 44	129 50	25 15	3	5	200	3·42	1′	4	200	10—10	1851·195	
208	—	—	—	26 25	3	5	—	3·75	2	6	—	—	— ·198	
209	h 4172	9 0	114 45	215 6	3	5	200	6·37	2	6	200	9′—10	1851·214	
210	—	—	—	— 32	2′	5	—	6·29	2	6	—	—	— ·228	
211	h 4188	7	133 0	285 20	5	5	200	2·79	2	6	200	6′—7′	1850·335	
212	—	—	—	286 3	3′	4	188	2·70	2′	6	188	—	— ·338	With Troughton's Micromr.
213	h 4220	28	138 20	203 32	3	5	200	2·45	1	4	200	7 —7′	1851·209	
214	—	—	—	— 17	3	5	—	2·48	2	6	—	—	— ·214	
215	B.A.C. 3365	44	154 22	128 55	2′	5	200	5·30	1′	6	200	4′—8′	1851·198	
216	—	—	—	124 2	3	5	—	4·51	1′	6	—	—	— ·209	
217	—	—	—	127 11	3′	5	—	5·34	2	6	—	5 —9	— ·214	
218	S 607	59	108 34	143 22	3	5	200	9·78	2	6	200	9′—9′	1851·209	Full aperture.
219	—	—	—	— 51	3′	5	—	10·08	2′	6	—	—	— ·214	4 in. do.
220	h 4329	10 26	142 57	37 0	2	5	200	—	—	—	—	5—10′	1850·971	
221	—	—	—	35 15	4	5	123	16·72	2′	6	123	5 —10	— ·983	Flying clouds.
222	—	—	—	37 11	4′	5	200	17·30	2′	6	200	5′—9	1851·026	
223	—	—	—	36 56	4′	5	123	18·25	1′	6	123·	—	— ·255	
224	—	—	—	37 30	5	5	200	17·55	3	6	200	—	1852·198	
225	—	—	—	38 39	3	5	—	17·14	2	6	200	—	— ·234	
226	—	—	—	39 15	7′	6	—	17·87	4′	8	—	—	— ·242	
227	—	—	—	38 36	8	6	—	17·56	8	6	—	—	— ·247	
228	h 4330	26·7	136 15	161 27	3′	5	123	40·41	1′	4	123	7 —10	1851·214	A yellow, B blue.
229	—	—	—	160 3	4	5	200	41·15	2	6	200	—	— ·228	
230	Δ 89	27	144 35	29 42	4′	5	123	25·84	2	6	123	7′—8′	1851·214	
231	—	—	—	— 17	4	5	—	25·93	2	6	—	—	— ·228	
232	B.A.C. 3655	33	148 25	20 22	5	6	123	15·22	2	6	123	6 —8′	1851·255	A orange, B green.
233	—	—	—	— 46	3	5	—	14·74	2	6	—	6 —9′	— ·264	
234	h 4409	11 0	131 50	272 57	3′	5	200	2·66	2	6	200	5′—9	1851·270	A orange, B bluish.
235	—	—	—	277 54	3	5	—	2·47	2′	6	—	—	— ·272	
236	—	—	—	276 29	2′	5	—	—	—	—	—	—	— ·278	A yellow, B reddish.
237	h 4423	10	135 2	277 20	2′	5	288	1·7	estimated.			8 —8	1850·338	With Troughton's Micromr
238	—	—	—	274 27	3	5	200	1·73	1	6	200	7′—8	— ·359	
239	ξ Urs. Maj.	10	57 37	123 32	4′	5	123	3·51	3	6	123	3′—5	1850·297	
240	—	—	—	125 0	4′	5	200	3·24	3	6	200	—	— ·305	
241	—	—	—	120 57	5	5	—	3·01	3	6	—	—	1852·293	
242	B 3574	18	150 48	305 20	3′	5	123	4·88	2	6	123	7 —8	1851·270	A yellow, B greenish.
243	—	—	—	304 19	4	5	200	4·54	2	6	200	—	— ·273	
244	B.A.C. 3907	21·4	131 51	167 24	4′	5	200	13·33	2′	6	200	6 —9	1850·300	
245	—	—	—	166 57	4′	5	—	13·61	2′	6	—	—	— ·305	
246	—	—	—	169 2	5	5	—	13·19	3	6	—	5′—8′	— ·359	
247	j 143; AB	22	113 39	77 10	3	5	123	7·55	2	6	123	7—9′	1851·215	
248	—	—	—	76 37	3	5	—	7·37	1	4	—	—	— ·255	
249	AC	—	—	114 47	1	1	123	120·	estimated.			7 —9	— ·215	
250	B.A.C.3921,2	24·5	118 27	212 25	4	5	200	8·67	3	6	200	6 —6	1851·286	Both orange.
251	—	24·5	118 27	211 43	5′	5	200	8·58	3	6	200	5′—5′	1851·294	

216 Set the circle at 129° which was pronounced quite intolerable.

219 Stars nearly equal.

220 *A* flaring and moulding, *B* seen by glimpses., the distance could not be taken.

235 Position set to 272° and pronounced intolerable.

250 Fine star, components nearly equal.

Reference Number.	Synonym.	A. R. 1850-0.	N P D 1850-0	Position Angle	Weight	No. of Observations	Magnifying Power.	Distance.	Weight	No of Observations.	Magnifying Power.	Magnitudes	Date.	Remarks.
		h. m.	° ′	° ′				″						
252	B.A.C. 4015	11 45	123 4	345 19	4	5	200	2·54	2′	6	200	6 —8′	1850·305	
253	—	—	—	340 25	2′	4	190	1·70	2	6	190	6 —8	— ·313	
254	—	—	—	338 57	3′	5	200	1·94	1′	6	200	—	1852·198	
255	h 4495	58	122 7	315 45	4	5	200	7·02	3	6	200	7 —8′	1852·234	
256	—	—	—	315 42	5	5	—	6·65	3	6	—	—	— ·242	
257	B.A.C.4095	12 2	123 53	21 17	3	5	200	3·01	2′	6	200	6 —9	1850·323	A yellow, B red.
258	—	—	—	22 13	3	5	—	3·08	3	6	—	—	— ·332	
259	γ Virginis	34	90 38	177 29	2′	4	123	2·84	2′	6	123	3′—3′	1850·297	
260	—	—	—	178 21	3′	5	—	2·95	2′	6	—	—	— ·305	
261	—	—	—	177 27	3′	5	200	3·09	2	6	200	—	1851·122	
262	—	—	—	178 0	3′	5	—	3·14	2′	6	—	—	— ·264	
263	—	—	—	175 0	7	5	—	3·17	4	6	—	—	1852·198	
264	—	—	—	175 43	4′	5	—	3·06	5	8	—	—	— ·247	
265	—	—	—	175 53	5	5	—	3·14	4	6	—	—	— ·291	
266	h 4556	46	117 9	80 19	3	5	200	6·06	2	6	200	7 —8′	1851·272	A yellow, B blue.
267	—	—	—	82 0	3	5	—	5·58	1	4	—	—	— ·278	
268	—	—	—	83 59	4′	5	—	5·54	3	6	—	8′—9′	1852·247	
269	—	—	—	82 20	4	5	—	5·54	2	6	—	8 —10	— ·250	
270	h 4563	53	122 50	237 51	4′	5	200	6·36	2′	6	200	7 —8′	1851·270	
271	—	—	—	238 25	4′	5	—	6·11	2′	6	—	—	— ·272	
272	—	—	—	236 50	4	5	—	5·78	2	6	—	—	— ·286	
273	B.A.C.4379	58	139 7	99 57	4	5	200	24·85	2	6	200	5 —11	1852·247	
274	—	—	—	100 13	4	5	169	25·80	⅓	2	—	6 —11	— ·351	
275	B.A.C.4558	13 32	143 48	165 33	4	5	123	5·32	3	6	123	5′—6′	1851·073	Both yellow.
276	—	—	—	163 56	3	5	—	5·67	2	6	—	—	— ·075	
277	h 4608	34	123 16	174 5	4′	5	200	4·46	2	6	200	8 —8	1851·102	
278	—	—	—	175 0	3	5	—	4·37	2′	6	—	—	— ·285	
279	B.A.C.4623	43	122 16	111 18	4	5	123	8·60	3	6	123	5 —7	1851·043	
280	—	—	—	110 56	4′	5	200	8·25	2′	6	200	—	— ·065	
281	B.A.C.4629	44·6	121 12	187 17	5	5	200	15·00	2′	6	200	5′—9	1851·102	
282	—	—	—	—	—	—	200	15·22	3′	6	—	—	— ·294	
283	Σ 1837	14 16·6	101 00	315 45	3	5	270	1·3	estimated.			7′—9	1852·421	
284				246 51	4	5	200	6·57	3′	8	200	1 —2	1850·278	
285				247 41	4′	5	123	6·57	3	6	123	—	— ·296	
286				— 10	4′	5	200	6·63	3	6	200	—	— ·299	
287				— 35	4	5	200	6·44	3′	6	—	—	— ·359	
288				— 38	3′	5	123	6·71	2′	6	123	—	— ·471	
289				— 9	2′	5	—	6·46	2	6	—	—	— ·496	
290				248 52	3	5	200	6·26	2′	6	200	—	— ·499	
291	α Centauri	30	150 13	— 22	4	5	—	* 6·67	3	10	—	—	— ·598	
292				— 29	3	5	—	* 6·22	5	12	—	—	— ·601	
293				— 36	4	5	—	6·20	2′	6	—	—	— ·603	
294				249 44	4	5	—	* 6·22	4	12	—	—	— ·611	
295				— 3	4′	5	—	* 6·05	4	12	—	—	— ·636	Day light.
296				— 19	4	5	—	5·98	2	6	—	—	— ·655	
297				— 45	4′	5	—	* 6·02	4	12	—	—	— ·655	

252, 253 } Unsatisfactory.

274 Measured with Dollond's Micrometor.
283 Do. do.

* Distance measured by repetition

Reference Number.	Synonym.	A. R. 1850·0.	N. P. D. 1850·0.	Position Angle.	Weight.	No. of Observations	Magnifying Power.	Distance.	Weight.	No. of Observations.	Magnifying Power.	Magnitudes.	Date.	Remarks.
		h. m.	° ′	° ′				″						
298				249 10	6	6	200	*6·24	2′	8	200	1—2	1850·690	
299				250 10	3′	5	—	5·88	3	6	—	—	— ·882	
300				249 27	3	5	—	5·66	2′	6	—	—	— ·884	
301				250 21	6	7	123	6·09	4	12	123	—	— ·889	
302								5·94	1	2	—	—	— ·889	
303				250 9	5	5	123	*5·94	4′	12	—	—	— ·933	
304				— 30	5′	5	200	5·76	3	6	200	—	— ·944	
305								*5·79	6	12	—	—	— ·944	
306				250 36	5′	5	123	5·96	5	8	123	—	— ·947	Day light.
307				— 47	3′	5	200	5·84	2′	6	200	—	— ·971	
308				251 13	5	5	—	5·84	4	8	—	—	— ·999	
309				250 53	6′	6	—	5·99	3	6	—	—	1851·001	
310				— 50	7	6	123	6·04	2′	6	123	—	— ·004	
311				251 11	4′	5	—	5·89	2′	6	—	—	— ·035	
312				— 2	3	5	—	6·08	1′	6	—	—	— ·043	
313				— 14	4	5	200	*5·70	3′	12	200	—	— ·056	
314				— 20	3′	5	—	5·84	2′	6	—	—	— ·059	
315				250 51	3	5	—	6·24	2	6	—	—	— ·102	
316				— 54	3	5	—	5·97	2′	6	—	—	— ·122	
317				252 32	4	5	—	6·16	2′	6	—	—	— ·136	
318				251 54	4	5	—	*5·98	4	12	—	—	— ·155	
319				— 55	3′	5	—	6·07	2	6	—	—	— ·174	
320				252 29	4′	5	—	5·81	2′	6	—	—	— ·215	Night, flaring.
321				251 53	5	6	—	5·91	4	8	—	—	— ·234	
322				252 22	4	5	—	5·83	2′	6	—	—	— ·264	
323				— 22	4	5	—	5·72	2′	6	—	—	— ·286	
324	*α* Centauri *continued.*	14 30	150 13	253 26	4′	5	—	5·86	3	6	—	—	— ·294	
325				255 27	3′	5	123	4·94	1′	6	123	—	— ·668	
326				— 48	4	5	—	5·09	2	6	—	—	— ·668	
327								*5·56	3	12	—	—	— ·668	
328				256 5	6′	6	200	5·35	3	6	200	—	— ·671	
329				— 16	6	6	—	5·36	3′	6	—	—	— ·685	
330				— 28	5	6	—	5·26	2′	6	—	—	— ·699	
331				— 32	4	5	—	4·98	1′	6	—	—	— ·707	
332				— 29	4	6	—	5·33	2	6	—	—	— ·709	
333				257 22	3	5	—	5·20	2	6	—	—	— ·759	
334				256 57	5	6	—	5·28	2′	6	—	—	— ·775	
335				257 8	3	5	—					—	— ·816	
336				258 8	4	5	—	4·98	2′	6	200	—	— ·884	
337				— 14	6	6	—	5·16	2′	6	—	—	— ·889	Day light.
338				257 50	4′	5	—	5·10	3	6	—	—	— ·892	
339				258 1	3′	5	—	5·06	3	6	—	—	— ·906	
340				— 53	3	5	—	5·13	2′	6	—	—	— ·909	
341				— 34	4	5	—	5·16	2′	6	—	—	— ·909	Taken at 22h.
342				— 17	5′	6	—	5·12	2′	6	—	—	— ·914	
343				— 38	4	4	—	5·17	2′	6	—	—	— ·917	
344				— 9	4′	5	—	5·19	2′	6	—	—	— ·958	
345				— 8	5	5	—	5·15	2	6	—	—	— ·963	
346				— 47	6	6	—	5·13	3	6	—	—	— ·969	
347				— 36	5′	6	—	5·06	3′	6	—	—	— ·972	
348				259 21	4	5	123	5·08	2′	6	123	—	— ·993	
349				— 49	5	5	200					—	1852·015	
350				258 41	5	5	123	4·93	2′	6	123	—	— ·018	

301 During the first three measures the stars were moulding, but became gradually more steady.

R

* Distance measured by repetition.

Reference Number.	Synonym.	A. R. 1850·0.	N. P. D. 1850·0.	Position Angle.	Weight.	No. of Observations.	Magnifying Power.	Distance.	Weight.	No. of Observations.	Magnifying Power.	Magnitudes.	Date.	Remarks.
		h. m.	° ′	° ′				″						
351				259 20	4	5	200	4·99	3	6	200	1—2	1852·026	Day light.
352				260 13	3′	5	—	5·23	3	6	—	—	— ·182	
353				261 32	5	5	—	4·95	3′	6	—	—	— ·185	
354				— 4	3′	5	—	4·93	2′	6	—	—	— ·201	
355				— 7	4′	5	—	5·04	2′	6	—	—	— ·239	
356				— 8	4′	5	—	5·02	2′	6	—	—	— ·247	
357				— 8	4	5	—	5·04	2′	6	—	—	— ·250	
358				— 0	4′	5	—	5·00	2′	6	—	—	— ·291	
359				— 16	4	5	270	4·90	3	6	270	—	— ·348	
360	α Centauri *continued.*	14 30	150 13	— 32	4′	5	169	4·98	2′	6	169	—	— ·351	Night, slightly flaring.
361				— 48	4′	5	—	4·80	3′	6	—	—	— ·378	
362				262 24	5	6	270	4·76	3	6	270	—	— ·386	
363				261 34	4′	5	—	5·13	3′	6	—	—	— ·394	
364				262 33	5	6	—	5·07	3′	6	—	—	— ·421	
365				264 14	5	5	—	5·08	3	6	—	—	— ·528	
366				— 18	4′	5	—	5·10	2′	6	—	—	— ·530	
367				— 2	3′	5	—	4·92	3′	6	—	—	— ·536	
368				263 55	4′	5	—	4·95	3′	6	—	—	— ·547	Day light.
369	h 4715	45	137 15	280 19	3	5	200	2·40	2	6	200	7′—8	1850·502	
370	—	—	—	281 48	3	5	—	2·42	2	6	—	—	1851·173	
371	π Lupi	55	136 28	287 27	1′	3	200	1·2	estimated.			5′—5′	1850·277	Barely notched.
372	—	—	—	289 13	3	5	—					—	— ·280	do. do.
373	μ Lupi AB	15 8	137 19	347 18	3	5	200	1·6	estimated.			5—5′	1850·328	
374	—	—	—	355 47	2′	5	—	1·5	do.			—	— ·655	
375	—	—	—	348 27	3	5	—	1·4	do.			—	1852·201	
376	—	—	—	350 49	3	5	—					—	— ·239	
377	AC	—	—	128 6	5	5	—	—	—	—	—	5—7	1850·328	
378	—	—	—	—	—	—	—	22·65	1	2	200	—	1852·201	
379	—	—	—	128 59	4	5	200					—	— ·239	
380	h 4788	25·6	134 27	351 37	3	5	200	2·72	2	6	200	6′—8	1851·234	
381	—	—	—	356 11	4	5	—	2·60	2′	6	—	5′—8	1852·201	
382	—	—	—	353 11	3′	5	—	2·55	2	6	—	6—8	— ·291	
383	ν Scorpii BC	16 3	109 4	43 38	3	5	200	1·5	estimated.			7—8	1850·598	
384	—	—	—	39 15	3′	5	—	*2·16	3	10	200	—	— ·636	
385	—	—	—	40 37	3′	5	—	2·08	2	6	—	—	— ·641	
386	h 4850	15	119 20	348 7	4′	5	200	7·18	4	6	200	6′—7	1851·234	
387	—	—	—	347 29	4	5	—	6·87	1′	4	—	—	— ·792	
388	Δ 213	59	136 32	164 35	2	4	123	8·	estimated.			8′—11	1851·228	
389	—	—	—	168 3	3′	5	200	7·72	2	6	200	7′—10	— ·792	
390	36 Ophiuchi	17 6	116 22	214 44	5	5	200	*4·49.	4	12	200	5—6	1850·603	
391	—	—	—	215 6	6	5	—	4·48	3	6	—	6—6	— ·641	
392	α Herculis	8	75 26	118 26	2	3	200	4·29	2′	6	200	3′—7	1851·710	Day light.
393	—	—	—	117 50	2	3	—	4·77	3	6	—	—	— ·710	Night.
394	—	—	—	— 53	5	5	—	4·71	3	6	—	—	— ·745	Day light.
395	—	—	—	— 29	3	4	—	4·86	2	6	—	—	— ·745	Night.
396	—	—	—	— 21	4	5	—	4·66	3	6	—	—	— ·811	Day light.
397	—	—	—	118 22	5′	5	—	4·50	3′	6	—	—	1852·237	do.
398	—	—	—	— 24	6′	5	—	4·40	2′	6	—	—	— ·239	do.

359 to 368 } Taken with Dollond's Micrometer.

372 The Stars are nearly equal, the northern smaller if any thing.

373 Notched, and separated by fits.

391 Definition superb.

* Distance measured by repetition.

Reference Number.	Synonym.	A. R. 1850-0.	N. P D. 1850-0.	Position Angle.	Weight.	No. of Observations.	Magnifying Power.	Distance	Weight.	No. of Observations.	Magnifying Power.	Magnitudes.	Date.	Remarks.
		h. m.	° ′	° ′				″						
399	α Herculis	17 8	75 26	117 39	4′	5	200	4·46	2′	6	200	3′—7	1852·242	Day light.
400	*continued.*	—	—	118 31	5	5	—	4·72	2′	6	—	—	— ·269	Night.
401	—	—	—	119 7	5′	5	—	4·44	3	6	—	—	— ·291	Day light.
402	39 Ophiuchi	9	114 7	353 12	5	5	123	9·78	2	6	123	6—8	1851·228	do.
403	—	—	—	353 19	5′	5	—	10·79	3′	6	—	—	— ·231	Night.
404	h 5000	48	126 55	108 20	3	5	200	6·	estimated.			8—11	1850·756	
405	—	—	—	107 52	3′	5	—	6·92	1′	6	200	8—10′	1851·231	
406	τ Ophiuchi	55	98 10	234 53	3′	5	200	1·	estimated.			5—6	1850·642	
407	—	—	—	236 15	2	5	—					—	— ·740	
408	—	—	—	230 36	5′	6	—					—	— ·833	Day light.
409	—	—	—	237 51	3	5	—					—	— ·836	
410	70 Ophiuchi	58	87 27	115 30	6	5	176	7·13	3′	6	176	6—6′	1850·311	With Troughton's Micromr.
411	—	—	—	114 54	6′	5	200	*6·66	4′	12	200	—	— ·636	
412	h 5041	18 12	143 43	265 14	2	5	200	2·0	estimated.			7′—10	1850·768	
413	—	—	—	263 48	1	3	—					—	— ·786	
414	BAC 6247	16	110 37	297 44	3	5	200	2·04	1′	6	200	6—9	1850·643	
415	—	—	—	— 33	3	5	—	2·06	1	4	—	6—9′	— ·786	
416	59 Serpentis	20	89 54	315 12	4	5	200	3·65	2′	6	200	6′—8′	1851·812	
417	—	—	—	313 13	4′	5	—	4·16	2′	6	—	—	1852·266	
418	—	—	—	314 11	4′	5	—	3·57	2′	6	—	—	— ·269	
419	—	—	—	315 16	4′	5	—	3·77	3′	6	—	—	— ·290	
420	h 5055	30	143 1	80 9	2	4	200	8·0	estimated.			9—9′	1850·757	
421	—	—	—	79 2	2′	5	—	6·48	1	4	200	—	— ·759	
422	B 6556	51	127 16	281 52	6	5	200	*13·31	4	10	200	7′—8	1850·604	
423	—	—	—	283 9	5	5	—	12·77	4	6	—	—	— ·643	
424	γ Cor. Aust.	56	127 16	6 0	4′	5	176	2·55	2	6	196	5′—5′	1850·313	Both yellow.
425	—	—	—	5 18	3	5	200	2·18	2	6	200	—	— ·322	
426	—	—	—	6 17	3	5	—	*2·38	4′	12	—	—	— ·601	
427	—	—	—	5 52	4	5	—	*2·14	4′	12	—	—	— ·604	
428	—	—	—	3 49	3	5	—	*2·04	2′	12	—	—	1851·155	
429	—	—	—	4 45	3	5	—	2·21	2	6	—	—	— ·174	
430	—	—	—	6 28	3	5	—	2·69	2	6	—	—	— ·668	
431	—	—	—	4 40	3	5	—	2·56	1	4	—	—	— ·671	
432	—	—	—	4 10	4	5	—	2·33	1′	4	—	—	— ·685	
433	—	—	—	3 14	3′	5	—	2·10	2	6	—	—	— ·792	
434	—	—	—	3 37	4	5	—	1·83	2	6	—	—	1852·242	Twilight.
435	—	—	—	4 2	4′	5	—	2·00	2	6	—	—	— ·261	do.
436	—	—	—	2 43	4′	5	340	1·85	2′	6	340	—	— ·304	do.
437	β Sagittarii	19 11	134 44	78 15	6	5	123	28·14	2′	6	123	3′—7	1850·653	
438	—	—	—	— 2	7	5	200	28·21	2′	6	200	—	— ·672	
439	h 5117	17	134 11	266 10	3	5	200	8·0	estimated.				1850·760	
440	—	—	—	264 23	3	5	—	6·31	1	4	200	7′—9′	1851·680	

406 A wedge.
407 Notched.
408 Well notched.
409 Do.
411 Definition superb.
413 Indistinct.
424 Taken with Troughton's Micrometer.
437 Sky hazy. Definition good.
438 Do. do.

* Distance measured by repetition.

Reference Number.	Synonym.	A. R. 1850·0.	N. P. D. 1850·0.	Position Angle.	Weight.	No. of Observations.	Magnifying Power.	Distance.	Weight.	No. of Observations.	Magnifying Power.	Magnitudes.	Date.	Remarks
		h. m.	° ′	° ′				″						
441	h 5117	19 17	134 11	264 26	3′	5	123	6·17	2	6	123	7′—9′	1851·825	
442	*continued.*	—	—	265 5	3′	5	—	6·48	2	6	—	7′—9	— ·831	
443	j 217	20 23	131 6	227 2	4′	5	200	4·21	3′	6	200	8′—9′	1850·570	
444	—	—	—	226 47	3	5	—	4·03	2	6	—	—	— ·671	
445	—	—	—	225 49	3	5	—	4·35	3′	6	—	—	— ·754	
446	BAC 7207	41	124 20	168 3	4	5	200	20·35	2	6	200	5′—11	1850·671	
447	—	—	—	167 50	4′	6	—	20·77	3	6	—	5′—10′	— ·754	
448	12 Aquarii	56	96 25	191 6	4′	5	200	2·93	3	6	200	6— 8′	1851·814	
449	—	—	—	— 8	3	5	—	2·86	2′	6	—	—	1852·000	
450	—	—	—	193 6	4′	5	270	2·68	2′	6	270	—	— ·400	}
451	—	—	—	192 28	4′	5	—	2·70	3	6	—	—	— ·417	} Dollond's Micromr.
452	—	—	—	189 8	4′	5	—	2 64	3′	6	—	—	— ·419	}
453	61 Cygni	21 0	51 59	102 48	8	6	200	* 17·53	5	12	200	5′—6	1850·617	Both ochre yellow.
454	—	—	—	103 10	7	5	—	17·34	5	12	—	—	— ·637	
455	—	—	—	102 42	6	5	—	17·54	3′	6	—	—	1851·732	
456	—	—	—	103 20	5′	5	—	17·50	3′	6	—	—	— ·738	
457	—	—	—	— 28	5	5	—	17·32	3	6	—	—	— ·786	
458	—	—	—	— 47	8	5	—	17·54	3′	6	—	—	— ·807	
459	θ Indi	9	144 4	301 6	3	5	200	3·54	2′	6	200	5′—9′	1850·637	
460	—	—	—	300 2	4	5	—	3·52	2′	6	—	—	— ·653	
461	—	—	—	296 52	4	5	—	3·52	3	6	—	—	1851·792	
462	—	—	—	298 33	3′	5	—	3·75	2′	6	—	—	— ·814	
463	—	—	—	297 79	5	5	270	3·72	3′	6	270	—	1852·419	Dollond's Micromr.
464	β Cephei	26	20 6	250 33	6	5	200	13·79	2′	6	200	3 —9	1851·814	
465	—	—	—	— 24	4′	5	—	13·72	2′	6	—	—	— ·820	
466	BAC 7578	38	137 59	9 21	6′	5	123	32·61	3′	6	123	6 —9′	1850·653	
467	—	—	—	9 35	6	5	—	31·76	3	6	—	—	— ·748	
468	h 5319	22 3	129 2	294 47	4	5	200	2·18	2	6	200	8—8	1851·820	Both orange.
469	—	—	—	297 46	4′	5	—	2·39	2′	6	—	—	— ·921	
470	ζ Aquarii	21	90 49	347 28	4′	5	200	3·60	5	6	200	4′—4′	1851·732	
471	—	—	—	346 35	4′	5	—	3·58	3	6	—	—	— ·738	
472	β Pis. Aust.	23	123 6	171 45	7	5	200	30·05	4′	6	200	4′—8′	1850·836	A yellow, B bluish.
473	—	—	—	172 24	7	6	—	30·20	4	6	—	—	— ·882	
474	γ Pis. Aust.	43	123 39	275 33	5	5	200	4·20	3	6	200	4′—9	1850·836	
475	—	—	—	274 54	3	5	—	4·16	2′	6	—	—	— ·882	
476	θ Gruis AB	58	134 21	8 52	3′	5	200	2·93	3	6	200	4—9	1851·792	
477	—	—	—	10 16	3	5	—	3·00	3	6	—	—	— ·812	
478	—	—	—	11 30	3	5	—	3·12	2	6	—	—	— ·815	
479	—	—	—	11 48	3′	5	—	2·54	2	6	—	—	— ·975	
480	AC	—	—	292 47	4′	3	200	159·48	½	1	200	4—8′	1851·812	
481	—	—	—	293 0	4′	3	—	160·56	1	2	—	—	— ·815	
482	—	—	—	292 39	3′	3	—					—	— ·975	
483	S 824	23 3	102 44	101 19	3′	5	200	3·45	2	6	200	7′—7′	1851·820	Both yellow.
484	—	—	—	101 12	4	5	—	3·73	2	6	—	—	— ·902	

441 Measured with full aperture.

447 Rather difficult from the faintness of B which does not bear a full illumination.

468 Position 114° ? Stars nearly equal.

470 Definition superb.

483 Nearly equal.

* Distance measured by repetition

Reference Number.	Synonym.	A. R. 1850·0.	N. P. D. 1850·0.	Position Angle.	Weight.	No. of Observations.	Magnifying Power.	Distance.	Weight.	No. of Observations.	Magnifying Power.	Magnitudes.	Date.	Remarks.
		h. m.	° ′	° ′				″						
485	h 5392	23 10	149 7	0 39	3	5	200	10·00	1′	6	200	8′—11	1850·825	A yellow, B blue.
486	—	—	—	1 48	2′	5	—					—	— ·882	
487	94 Aquarii	10	104 18	345 39	4	5	200	13·72	3	6	200	6 —8′	1851·812	Both yellow.
488	—	—	—	347 16	4	5	—	13·76	3	6	—	—	— ·815	
489	—	—	—	345 20	6	5	—	13·92	3	6	—	—	— ·885	
490	—	—	—	345 26	6	5	—	13·89	3	6	—	—	— ·899	
491	—	—	—	345 35	5′	5	169	13·69	3	6	169	6 —8	1852·398	Dollond's Micrometer (491–494).
492	—	—	—	— 50	4′	5	—	13·84	2′	6	—	—	— ·417	
493	—	—	—	— 10	6	5	270	14·10	2′	6	270	—	— ·419	
494	—	—	—	344 38	5	5	—	13·92	2′	6	—	—	— ·425	
495	θ Phœnicis	31	137 25	269 10	5	5	200	4·19	3	6	200	6′—7	1851·792	
496	—	—	—	269 31	3	5	—	3·97	2	6	—	—	— ·809	
497	—	—	—	269 55	3′	5	—	4·02	2	6	—	—	— ·811	
498	B 7342	47	117 53	269 15	4′	5	200	6·73	2	6	200	7 —7′	1851·820	
499	—	—	—	269 0	5′	5	—	6·61	3	6	—	—	— ·921	
500	h 5440	55	117 58	286 32	3′	5	200	3·60	2	6	200	8′—9	1851·820	
501	—	—	—	287 28	3′	5	—	3·56	2	6	—	—	— ·921	

485 Colour of B very conspicuous for so faint a star.

486 Difficult, measured on the thick wire.

MEAN RESULTS

OF THE FOREGOING MEASURES

OF

144 DOUBLE OR MULTIPLE STARS,

WITH THE

LEREBOURS EQUATORIAL.

Reference Number.	Synonym.	A. R.	N. P. D.	Position Angle.	Weight.	No. of Observations.	Epoch 1850. +	Distance.	Weight.	No. of Observations.	Epoch 1850. +	Magnitudes.
		h. m.	° ′	° ′			yr.	″			yr.	
*245	h 1957	0 14	113 50	20 56	6	10	0·977	6·13	4	12	0·977	7·5 — 9·5
246	β Tucani	25	153 47	171 15	8	10	0·958	27·32	4′	12	0·958	5 — 5·5
247	h 3375	26	125 48	165 30	10′	10	0·954	6·19	6	12	0·954	7 — 9
248	η Cassiopeæ	40	32 59	105 33 106 24	30 15	26 15	0·876 1·886	8·16 8·04	16 10	36 18	0·838 1·891	4 — 9
249	h 2004	50	109 49	239 31	4′	10	0·993	3·20	2′	12	0·990	6·5—10·5
250	S 390	51	106 28	34 58	9	10	0·980	6·37	5′	12	0·982	7·5 — 7·5
251	S 391	52	90 0	305 55	8′	10	1·781	18·88	4	12	1·778	8 — 10
252	S 392	57	96 16	166 48	7	10	1·113	11·83	4′	12	1·113	8·5 — 9
253	h 3416	57	150 54	129 7	6′	10	0·976	4·735	4	12	0·977	8 — 8
254	ζ Phœnicis	1 2	146 4	242 15	6	10	1·001	6·39	5	12	1·001	5·5 — 9·5
255	S 396	6	98 25	339 20	6	10	1·015	21·01	3	12	1·015	7 —10·5
256	h 2036	12	106 36	40 45	7	10	1·901	1·89	3′	12	1·911	7 — 7·5
257	h 3447	29	120 43	82 31	6′	10	1·029	2·62	4	12	1·029	5·5 — 7·5
258	p Eridani	34	146 57	268 44 266 23	14 4′	20 5	0·797 1·792	4·32 4·30	11′ 3	24 6	0·790 1·792	6·5 — 6·5
259	h 3475	51	151 4	43 30	4′	7	1·029	2·5	estimated.			7 — 7·5
260	H. & S. 24?	53	113 40	124 14	10	11	1·052	7·81	5′	12	1·053	7 — 7
261	α Piscium	54	87 58	329 26 329 13	14 8′	16 10	0·962 1·761	3·66 3·49	8 6′	18 12	0·962 1·760	5·5 — 5·7
262	J 21 AB AC	2 7	123 0	280 41 182 22	6 3	10 2	1·058 1·071	6·19 180·	4 estimated.	12	1·058	7 —10·5 7 — 7
263	S 412	19	106 3	292 48	7′	10	1·103	11·39	4	12	1·103	6 — 10
264	h 3504	23	121 3	269 14	7	10	1·077	6·18	4′	12	1·077	8 — 9
265	h 3527	37	131 9	45 0	6	10	1·039	1·5	estimated.			7·5 — 7·5
266	Δ 8	51	115 35	221 24	10′	10	1·038	27·70	4	10	1·038	7·3 — 7·5
267	θ Eridani	52	130 52	82 22	21	22	1·763	8·11 a 7·99 b 8·22	22′ 10 12′	42 18 24	1·750 1·736 1·761	3·5 — 4·2
268	12 Eridani	3 6	119 35	308 19	7	10	1·089	3·39	5	12	1·086	4·5 — 7
269	h 3556	7	134 59	230 30	8	13	1·110	2·44	3	12	1·115	6 —10·5

251 The angle is progressing steadily at the rate of 0°·36 per annum, distance constant.

252 The retrograde motion is confirmed and the distance continues to decrease.

254 Perhaps a small retrogression in position.

255 Little or no change, distance perhaps increased.

257 This star presents some anomalies; my observations show no change in 5 years, while they differ from Herschell's by 7°.

258 Position retrograding about 2° per annum, distance steady.

259 Position seems to have advanced.

261 The angle is decidedly though slowly receding, and the distance decreasing; the orbit (apparent) must be highly elongated.

263 Unchanged.

267 a, daylight observations; b, night do.

269 The stars would seem to have opened a little since Herschell's Cape Observations, but the angle can have changed little if any thing.

* The Numbers are carried on from the Poona Catalogue published in 17th Volume of Memoirs of Royal Astronomical Society.

Reference Number.	Synonym.	A. R.	N. P. D.	Position Angle.	Weight.	No of Observations.	Epoch 1850. +	Distance.	Weight.	No. of Observations.	Epoch 1850. +	Magnitudes.
		h. m.	° ′	° ′			yr.	″			yr.	
270	S 431	3 29	89 54	237 34	8	10	1·056	6·19	4	12	1·052	6·3 — 8·5
271	h 3596	43	122 15	136 10	9	10	1·061	8·62	5′	12	1·060	8 — 8
272	32 Eridani	46	93 20	347 32	8′	10	1·059	6·75	5′	12	1·062	6 — 7
273	h 3622	59	126 17	111 54	6′	10	1·119	9·76	3′	12	1·119	9 — 10
274	h 3632	4 9	120 28	164 31	9	15	1·024	10·645	7	18	1·026	7 — 10·5
275	h 3634	11	135 1	330 32	4′	10	1·155	11·20	2	6	1·157	10 — 10·5
276	h 3642	14	124 16	159 54	6′	10	1·090	5·98	5	12	1·090	6 — 9·5
277	θ Tauri	20	74 22	166 5	12	11	1·728	338·72	8	17	1·727	5 — 5·5
278	BAC 1387	21	147 25	231 31	9	10	1·079	6·55	6	12	1·078	6·2 — 6·7
279	Σ 570	28	100 4	259 9	15	15	1·115	13·025	6′	18	1·116	6·2 — 6·7
280	55 Eridani	36	99 5	316 18	9′	10	1·131	9·17	7	12	1·130	6 — 6
281	BAC 1573	59	125 41	315 29	6′	10	0·999	3·15	3	12	0·999	5 — 9
282	h 3745	5 13	124 11	166 52	6	10	1·053	13·35	3	10	1·049	7·2 — 10·7
283	h 3752 AB	16	114 55	107 35	7′	10	1·079	2·98	4	12	1·079	6 — 8
	AC			105 59	4	4	1·079	59·31	1	1	1·083	6 — 9
284	h 3760	21	125 30	220 59	6	10	1·122	7·50	4′	12	1·122	8·2 — 8·7
285	λ Orionis	27	80 10	42 30	7	10	1·069	4·67	4′	10	1·076	4·5 — 7
286	h 3777	31	145 1	349 35	6	10	1·166	50·50	4	12	1·166	6·5 - 12
287	*np* 6 Orionis	31	92 40	267 41	9	10	1·171	8·30	4	12	1·172	8 — 8
288	ζ Orionis	32	92 2	152 9	8	10	1·182	2·64	4	12	1·182	2 — 7
289	h 3789	35·5	140 14	0 49	7	10	1·055	8·94	6′	12	1·057	7·7 — 8·5
290	S 497	38	94 19	88 9	6′	10	1·196	7·11	4′	12	1·196	6·5 — 9·5
291	52 Orionis	40	83 36	201 9	7	10	1·041	1·78	1	4	1·042	6·5 — 6·5
292	S 504	52	110 10	253 41	9′	15	1·178	3·59	3′	12	1·173	9·2 — 9·2
293	h 3823	55	121 4	130 32	6	10	1·126	4·00	3′	10	1·123	8·2— 8·2
294	BAC 1972 Δ 23	6 1	138 28	353 4	6	10	1·091	2·49	3′	12	1·093	7 — 7·5
295	j 60	14	119 33	207 39	9	10	1·177	13·16	4′	12	1·178	7·5 - 10
296	j 63 AB	20	124 59	47 51	7	6	1·139	127·84	1′	4	1·121	6·2 — 8·2
	BC			316 52	7′	10	1·138	3·67	4′	12	1·137	8·2 — 9

270 The position appears to have advanced about 0°·5 per annum and the distance to have slightly increased.
271 Position unchanged; distance perhaps decreased.
272 No apparent change.
273 Do.
274 Perhaps a small advance.
275 Distance perhaps decreased.
279 Little or no change.
281 Position advancing nearly 0°·8 per annum.
282 The distance seems to have increased.
283 Perhaps a small change in position.
284 Unchanged.
292 Position and distance seem both to have decreased.
293 Little or no change; distance perhaps decreased.
294 An evident advance of nearly 0°·7 per annum, though the differences are not so regular as might be desired, diff. from Dunlop + 2°·4, from Herschell + 1°·0.
296 In the Poona Memoir (Ast. Soc. Vol. XVII.) the distance of AB is given at 95″·80, but if an error of 1 rev. of the micrometer be admitted it will be 127″·16.

Reference Number.	Synonym.	A. R.	N. P. D.	Position Angle.	Weight.	No. of Observations.	Epoch 1850. +	Distance.	Weight.	No. of Observations.	Epoch 1850 +	Magnitudes.
		h. m.	° ′	° ′			yr.	″			yr.	
297	h 3860	6 21	130 53	226 36	6	10	1·177	8·46	4	12	1·177	7·5 — 9
298	11 Monoc. AB BC	21	96 56	130 6 103 5	10′ 8	10 10	1·196 1·196	7·34 2·76	6′ 5	12 12	1·196 1·196	5·7 — 6·5 6·5 — 6·7
299	ν Can. Maj.	30	108 32	262 8	12	10	1·204	17·64	5	12	1·205	6·5 — 8·5
300	BAC 2207	37	128 15	277 13	8	10	1·091	7·97	5	12	1·091	6·5 — 7·5
301	38 Gemin.	46	76 38	168 4	8	10	1·102	6·00	5	12	1·102	6·2 — 8·7
302	ζ Gemin.	55	69 13	352 43	11	9	1·070	92·46	6	12	1·068	4 — 7
303	BAC 2326	7 1	148 57	76 8	5	10	0 608	2·69	2	6	0·294	6·5 — 7
304	h 3950	13	111 46	346 36	9	10	1·216	4·04	5′	12	1·215	8 — 8
305	BAC {2422, 2425} AB BC CD	13	126 28	96 40 215 27 213 3	6 5 5′	4 5 10	1·209 1·209 1·209	239·35 117·73 2·98	1 1 2	1 2 6	1·211 1·209 1·211	5·2 — 5·7 5·7 — 9·7 9·7—10·5
306	h 3966	20	127 1	322 46	9′	11	1·126	7·15	6	12	1·124	6·5 — 6·5
307	Castor	25	57 47	248 18 247 57	18 29′	20 30	0·668 1·733	4·98 5·05 *a* 4·96 *b* 5·23	7′ 20 13 7	22 36 24 12	0·909 1·730 1·738 1·724	2 — 2·5 2 — 2·5
308	BAC 2511	30	104 9	303 27	7	10	1·225	7·09	4′	12	1·224	7 — 7
309	h 4009	44	121 47	310 17	8′	13	1·203	8.67	5′	18	1·203	9·2 — 9·5
310	h 4031	56	150 27	356 48	7′	10	1·163	5·44	4	12	1·163	7·2 — 7·7
311	Δ 68	8 5	132 11	81 31	7	10	0·998	5.98	4′	12	1·001	7 — 8·5
312	γ Argus AB AC CD	5	136 54	219 34 151 24 122 1	7 6′ 4	6 6 6	1·195 1·194 1·196	41·18 61·80 34·38	2′ 3 2	8 6 8	1·195 1·193 1·196	2 — 5·2 5·2 — 9 9 —11
313	h 4069	10	135 23	253 25	17′	15	1·428	33·36	7′	18	1·434	5·5 — 9·5
314	B. 1974 AB BC AC	14	134 34	326 18 143 20 142 50	6 2 1	10 2 1	1·196 1·196 1·198	5·42 — 77·61	4 — ⅓	12 — 1	1·197 — 1·198	9·2 — 9·5 9·5—10 9·2—10
315	h 4093	21	128 34	122 53	9	10	1·086	8·10	6	12	1·094	6·2—67
316	Δ 70	24	134 14	349 47	6′	10	1·202	4·64	5	12	1·202	6·5 — 8.5
317	h 4107 AB AC	26	128 33	330 9 101 22	12 4	15 5	1·127 1·128	4·45 31·65	6 1	18 2	1·129 1·162	6·5 — 8·2 8·2—10
318	h 4128	36	149 47	220 31	7	13	0·322	1·6	estimated.			7·5 — 8·2
319	BAC2986 (j 111)	42	148 10	291 38	8	14	1·567	3·99	3′	12	1·196	7·8 — 8·2
320	j 113	44	129 50	25 48	6	10	1·196	3·61	3′	10	1·196	10—10

303 The supposed advance is not confirmed.

307 *a* daylight observations ; *b* night do.

310 Perhaps a small change.

314 There is a 4th Star of 12th mag. position 350°, distance 80″ from B, as estimated from diagram.

318 The stars seem to have closed a little since Herschel's Cape Observations.

320 Little or no change in five years.

Reference Number.	Synonym.	A. R.		N. P. D.	Position Angle.	Weight.	No. of Observations.	Epoch 1850. +	Distance.	Weight.	No. of Observations.	Epoch 1850. +	Magnitudes.
		h.	m.	° ′	° ′			yr.	″			yr.	
321	h 4172	9	0	114 45	215 18	5′	10	1·220	6·33	4	12	1·221	9·5—10
322	h 4188		7	113 0	285 38	8′	9	0·336	2·74	4′	12	0·337	6·5 — 7·5
323	h 4220		28	138 20	203 24	6	10	1·212	2·47	3	10	1·212	7 — 7·5
324	BAC 3365		44	154 22	126 37	9	15	1·208	5·08	5	18	1·208	5 — 9
325	S 607		59	108 34	143 37	6′	10	1·212	9·95	4′	12	1·212	9·5 — 9·5
326	h 4329	10	26	142 57	{ 36 32 { 38 35	15 23	20 22	1·071 2·234	17·30 17·60	6′ 12′	18 26	1·062 2·235	5·2—10′ ——
327	h 4330		26·7	136 15	160 42	7′	10	1·221	40·83	3′	10	1·222	7 — 10
328	⊿ 89		27	144 35	29 30	8′	10	1·221	25·89	4	12	1·221	7·5 — 8·5
329	BAC 3655		33	148 25	20 31	8	11	1·258	14·98	4	12	1·259	6 — 9
330	h 4409	11	0	131 50	275 42	9	15	1·273	2·55	4′	12	1·271	5·5 — 9
331	h 4423		10	135 2	275 46	5′	10	0·349	1·73	1	6	0·359	7·7 — 8·2
332	ξ Urs. Maj.		10	57 37	{ 124 15 { 120 57	9 5	10 5	0·301 2·293	3·37 3·01	6 3	12 6	0·301 2·293	3·5 — 5 ——
333	B 3574		18	150 48	304 48	7′	10	1·271	4·71	4	12	1·271	7 — 8
334	BAC 3907		21·4	131 51	167 50	14	15	0·322	13·36	8	18	0·324	5·7 — 8·7
335	{ j 143 AB } { AC }		22	113 39	{ 76 54 { 114 47	6 1	10 1	1·235 1·215	7·49 120·	3 estimated.	10	1·228	7 — 9·5 7 — 9
336	BAC 3921,2		24·5	118 27	212 1	9′	10	1·291	8·62	6	12	1·290	5·7 — 5·7
337	BAC 4015		45	123 4	341 42	10	14	0·970	2·07	5′	18	0·824	6 — 8·2
338	h 4495		58	122 7	315 43	9	10	2·238	6·84	6	12	2·238	7 — 8·5
339	BAC 4095		12·2	123 53	21 45	6	10	0·328	3·05	5′	12	0·328	6 — 9
340	γ Virginis		34	90 38	{ 178 0 { 177 43 { 175 28	6 7 16	9 10 15	0·302 1·193 2·239	2·90 3·12 3·12	5 4′ 13	12 12 20	0·301 1·201 2·245	3·5 — 3·5 —— ——
341	h 4556	12	46	117 9	{ 81 9 { 83 12	6 8′	10 10	1·275 2·248	5·90 5·54	3 5	10 12	1·274 2·248	7 — 8·5 8·2 — 9·7
342	h 4563		53	122 50	237 44	13	15	1·276	6·105	7	18	1·275	7 — 8·5
343	BAC 4379		58	139 7	100 5	8	10	2·299	25·04	2′	8	2·268	5·5—11
344	BAC 4558	13	32	143 48	164 51	7	10	1·074	5·46	5	12	1·074	5·5 — 6·5

321 On the whole there appears to be no change, though the differences are large, for so easy a star.

322 Unchanged.

323 Probably no change, though the distance may have decreased a little.

324 Unchanged.

326 This pair has advanced in position more than 20° since 1837, with very little change of distance; but the change is probably due to the proper motion of A.

330 These stars seem to be opening, but the angle is little altered.

331 The angle has advanced and the distance increased.

333 The angle has advanced and the distance decreased.

334 Remarkably coincident with the observations in 1847.

337 The observations present considerable anomalies for so easy a star, but on the whole, it appears to have undergone little or no change: the magnitude of B is probably underrated, though it would seem to be somewhat variable.

341 Perhaps a small advance in position, and the distance apparently decreased.

342 }
343 } Little or no change.
344 }

Reference Number.	Synonym.	A. R.	N. P. D.	Position Angle.	Weight.	No. of Observations.	Epoch 1850. +	Distance.	Weight.	No. of Observations.	Epoch 1850. +	Magnitudes.
		h. m.	° ′	° ′			yr.	″			yr.	
345	h 4608	13 34	123 16	174 27	7′	10	1·175	4·41	4′	12	1·204	8 — 8
346	BAC 4623	43	122 16	111 7	8′	10	1·054	8·44	5′	12	1·053	5 — 7
347	BAC 4629	44·6	121 12	186 45	10	10	1·198	15·13	6	12	1·214	5·5 — 9
348	Σ 1837	14 16·6	101 0	313 45	3	5	2·421	1·3	estimated.			7·5 — 9
349	α Centauri	30	150 13	247 31 249 6 250 16 251 3 252 8 256 23 258 12 258 51 261 4 261 53 264 7	26 34 28′ 37 39′ 41 37′ 39′ 30 27′ 17′	35 41 32 42 51 50 46 42 35 32 20	0·370 0·636 0·917 1·018 1·205 1·702 1·895 1·988 2·232 2·381 2·535	6·524 6·200 5·884 5·880 5·937 5·270 5·108 5·078 5·030 4·944 5·000	20 27 33 22 27′ 23′ 21 19 19 19 12′	44 78 64 56 68 66 48 42 42 36 24	0·372 0·636 0·922 1·020 1·202 1·700 1·899 1·988 2·266 2·382 2·535	1 — 2 — — — — — — — — — —
350	h 4715	45	137 15	281 4	6	10	0·838	2·41	4	12	0·838	7·5 — 8
351	ω Lupi	55	136 28	288 38	4′	8	1·278	1·2	estimated.			5·5 — 5·5
352	μ Lupi AB AC	15 8	137 19	350 5 128 30	12 9	20 10	1·486 1·177	1·5 22·65	estimated. 1	 2	 2·201	5 — 5·5 5 — 7
353	h 4788	25·6	134 27	353 30	10′	15	1·955	2·62	6′	18	1·931	6 — 8
354	ν Scorpii BC	16 3	109 4	41 3	10	15	0·626	2·13	5	16	0·638	7 — 8
355	h 4850	15	119 20	347 49	8′	10	1·497	7·09	5′	10	1·386	6·5 — 7
356	Δ 213	59	136 32	166 47	5′	9	1·433	7·72	2	6	1·792	8 — 10·5
357	36 Ophiuchi	17 6	116 22	214 56	11	11	0·623	4·49	7	18	0·619	5·5 — 6
358	α Herculis	8	75 26	117 44 118 26	16 27	20 25	1·753 2·252	*a* 4·570 *b* 4·806 *a* 4·450 *b* 4·720	8′ 5 11′ 2′	18 12 24 6	1·758 1·724 2·253 2·269	3·5 — 5·5 — — —
359	39 Ophiuchi	9	114 7	353 16	10	10	1·230	10·43	5′	12	1·230	6 — 8
360	h 5000	48	126 55	108 5	6′	10	1·011	6·92	1′	6	1·231	8 — 10·7
361	τ Ophiuchi	55	98 10	234 0	13′	21	0·777	1·0	estimated.			5 — 6
362	70 „	58	87 27	115 11	12′	10	0·483	6·86	8	18	0·494	6 — 6·5
363	h 5041	18 12	143 43	264 45	3	8	1·107	2·0	estimated.			7·5 — 10

345, 346, 347 } Little or no change.

349 The advance in position continues with accelerated speed, but the rate of approach in distance appears to be slackening, so that the stars will probably come to a minimum (but not *the* minimum) of distance in the course of another year or two, the true periastre will not be arrived at before 1858 or 60.

350 There is perhaps a small advance in position and decrease of distance.

351 Position may be 108°;—there appears little or no change.

353 The same remark as 350.

354 Little or no change since the discovery in 1847.

355 Little or no change.

357 The slow recess in position continues, and the distance is decreasing.

358 There is a trace of parallax shewn here which subsequent observations confirm.

360 Little or no change.

a Daylight observations; *b* night do.

Reference Number.	Synonym.	A. R.		N. P. D.	Position Angle.	Weight.	No. of Observations.	Epoch 1850. +	Distance.	Weight.	No of Observations.	Epoch 1850. +	Magnitudes.
		h.	m.	° ′	° ′			yr.	″			yr.	
364	BAC 6247	18	16	110 37	297 39	6	10	1·214	2·05	2′	10	1·100	6 — 9·2
365	59 Serpentis		20	89 54	314 28	18	20	2·158	3·79	6	12	2·171	6·5 — 8·5
366	h 5055		30	143 1	79 32	4′	9	0·758	6·48	1	4	0·759	9 — 9·5
367	Prec. γ Cor. Aust.		51	127 16	282 27	11	10	0·625	13·04	8	16	0·623	7·5 — 8
368	γ Cor. Aust.		56	127 16	5 52 4 28 3 27	14 19′ 13	20 30 15	0·455 1·539 2·270	2·29 2·26 1·89	13 10′ 6′	36 38 18	0·515 1·477 2·272	5·5 — 5·5 — —
369	β Sagittarii	19	11	134 44	78 8	13	10	0·663	28·17	5	12	0·663	3·5 — 7
370	h 5117		17	134 11	265 0	13	20	1·547	6·32	5	16	1·798	7·5 — 9·2
371	j 217	20	23	131 6	226 36	10′	15	0·654	4·21	9′	18	0·663	8·5 — 9·5
372	BAC 7207		41	124 20	167 56	8′	11	0·716	20·60	5	12	0·720	5·5—10·7
373	12 Aquarii		56	96 25	191 7 191 34	7′ 13′	10 15	1·876 2·412	2·90 2·67	5′ 9	12 18	1·899 2·415	6 — 8·5 —
374	61 Cygni	21	0	51 59	102 58 103 21	15 24	11 20	0·626 1·773	17·43 17·48	10 13′	24 24	0·627 1·760	5·5 — 6 —
375	ϑ Indi		9	144 4	300 29 297 31	7 12′	10 15	0·646 2·050	3·53 3·66	5 9	12 18	0·645 2·034	5·5 — 9·5 —
376	β Cephei		26	20 6	250 29	10′	10	1·817	13·75	5	12	1·817	3 — 9
377	BAC 7578		38	137 59	9 28	12′	10	0·700	32·22	6′	12	0·697	6 — 9·5
378	h 5319	22	3	129 2	116 22	8′	10	1·873	2·30	4′	12	1·876	8 — 8
379	ζ Aquarii		21	90 49	347 2	9	10	1·735	3·59	8	12	1·734	4·5 — 4·5
380	β Pis. Aust.		23	123 6	172 4	14	11	0·859	30·12	8′	12	0·858	4·5 — 8·5
381	γ do. do.		43	123 39	275 18	8	10	0·853	4·18	5′	12	0·857	4·5 — 9
382	θ Gruis AB AC		58	134 21	10 35 292 49	13 12′	20 9	1·851 1·859	2·91 160·20	10 1′	24 3	1·839 1·814	4 — 9 4 — 8·5
383	S 824	23	3	102 44	101 15	7′	10	1·863	3·59	4	12	1·861	7·5 — 7·5
384	h 5392		10	149 7	1 10	5′	10	0·851	10·00	1′	6	0·825	8·5—11
385	94 Aquarii		10	104 18	345 49 345 14	20 21	20 20	1·861 2·415	13·82 13·854	12 10′	24 24	1·853 2·414	6 — 8·5 6 — 8
386	θ Phœnicis		31	137 25	269 29	11′	15	1·802	4·08	7	18	1·802	6·5 — 7
387	B 7342		47	117 53	269 7	10	10	1·875	6·66	5	12	1·881	7 — 7·5
388	h 5440		55	117 58	287 0	7	10	1·870	3·58	4	12	1·870	8·5 — 9

366 The position has apparently advanced: the distance perhaps decreased.
367 Unchanged.
368 A steady advance of about 1°·8 per annum, distance slightly decreasing.

370, 371, 372, 376 } Unchanged.

NORTH POLAR DISTANCES

OF

THE PLANET MARS

AND OF

STARS SITUATED NEAR TO HIS PATH

AT THE SEVERAL OPPOSITIONS

BETWEEN 1847 AND 1852.

OBSERVED AT THE MADRAS OBSERVATORY.

Madras Mean Time.	Names.	Barometer.	Thermometer. In.	Thermometer. Out.	Observed N. P. D.
d. h. m.		Inches.	°	°	° ′ ″
1847. Oct. 4 14 0·7	σ Arietis ♂ Centre * (a)	29·982	82·3	81·7	75 31 59·8 76 2 35·2 75 59 36·9
5 13 56·1	σ Arietis ♂ Centre * (b)	29·958	82·2	80·4	75 32 0·2 76 3 5·2 76 6 48·9
18 12 52·3	υ Arietis ♂ Centre * (e)	29·964	80·8	80·2	78 11 56·5 76 24 41·2 76 23 25·6
19 12 47·1	υ Arietis ♂ Centre * (e)	29·968	80·3	78·7	78 11 45·3 76 27 21·3 76 23 25·3
22 12 31·3	υ Arietis ♂ Centre * (f)	30·048	80·6	79·8	78 11 53·8 76 35 59·2 76 41 50·1
25 12 15·3	ω Arietis * (h) ♂ Centre	30·020	77·8	77·2	75 38 32·1 76 53 44·3 76 45 20·1
26 12 10·0	19 Arietis * (k) ♂ Centre	30·026	78·3	77·3	75 25 10·0 76 50 6·6 76 48 35·6
Nov. 5 11 16·7	19 Arietis ♂ Centre * (l)	30·084	80·0	79·9	75 25 1·8 77 21 2·8 77 19 36·7
6 11 11·5	19 Arietis ♂ Centre	30·017	79·5	78·3	75 24 56·8 77 24 2·2
9 10 55·9	♂ Centre * (m)	30·076	79·2	77·6	77 32 22·2 77 29 46·6
10 10 50·8	A.S.C. 212 ♂ Centre	30·102	78·4	78·0	78 25 34·9 77 34 54·9
11 10 45·7	♂ Centre * (n)	30·112	79·2	79·5	77 37 15·2 77 45 5·3
13 10 35·7	A.S.C. 212 ♂ Centre	30·110	77·6	76·7	78 25 33·2 77 41 33·2
15 10 25·8	A.S.C. 212 ♂ Centre * (n)	30·082	75·2	73·0	78 25 33·9 77 45 10·3 77 44 58·3
16 10 21 0	♂ Centre * (n)	30·048	74·5	73·2	77 46 40·2 77 41 44·2
23 9 48·4	* (o) ♂ Centre * (n)	30·090	77·3	76·6	77 47 1·1 77 51 31·4 77 41 43·4

Madras Mean Time.	Names.	Barometer.	Thermometer. In.	Thermometer. Out.	Observed N. P. D.
d. h. m.		Inches.	°	°	° ′ ″
1849. Nov. 19 14 28·1	B.A.C. 2058 ♂ Centre ε Gemin.	30·080	77·1	76·4	64 50 47·8 64 48 12·6 64 41 40·4
20 14 23·4	B.A.C. 2058 ♂ Centre ε Gemin.	30·068	76·1	74·3	64 50 47·1 64 44 49·9 64 41 40·2
21 14 18·7	B.A.C. 2058 ♂ Centre ε Gemin.	30·039	76·0	74·9	64 50 50·5 64 41 24·9 64 41 39·4
22 14 14·0	♂ Centre ε Gemin.	30·008	75·9	74·6	64 38 0·4 64 41 41·8
23 14 9·2	Hist. Cel 11854 ♂ Centre ε Gemin.	30·035	79·1	79·1	64 35 43·3 64 34 34·1 64 41 39·7
28 13 44·1	5 Gemin. ♂ Centre	30·090	77·7	76·5	65 31 11·8 64 17 34·1
29 13 39·0	5 Gemin. ♂ Centre Hist. Cel. 12336	30·082	78·0	77·5	65 31 13·0 64 14 13·7 64 15 36·1
Dec. 2 13 23·1	♂ Centre B.A.C. 2058 Hist. Cel 12395	30·030	75·9	76·1	64 4 40·7 64 50 48·2 64 11 31·7
10 12 39·0	Hist Cel. 11108 ‡ 139 Tauri ♂ Centre	29·959	71·3	71·0	63 33 55·9 64 2 21·8 64 43 0·4
11 12 33·4	* Hist Cel. 11108 — 139 Tauri ♂ Centre	30·016	74·1	72·7	63 33 55·6 63 35 5·2 64 2 21·3 63 40 49·5
12 12 27·8	Hist Cel. 11108 † 139 Tauri ♂ Centre	30·024	76·1	75·0	63 35 6·0 64 2 21·1 63 38 50·3
13 12 22·1	Hist Cel 11108 ‡ ♂ Centre Taylor III 671	30·044	75·8	74·3	63 35 8·2 63 36 58·5 63 17 22·3
17 11 59·4	125 Tauri Hist.Cel. 11108 ‡ ♂ Centre	30·136	78·2	77 9	64 9 40·8 63 33 55·4 63 31 3·0
18 11 53·7	125 Tauri ♂ Centre Hist.Cel. 11108 ‡	30·181	77·8	77·6	64 9 40·4 63 29 59·1 63 33 56·7
19 11 48·0	125 Tauri ♂ Centre Hist.Cel. 11108 ‡	30·152	76·8	76·3	64 9 41·8 63 29 3·9 63 33 56·0

* Three Stars, the 1st and 3rd observed and the 2d omitted. † 3d Star. ‡ 1st Star.

Madras Mean Time.	Names.	Barometer.	Thermometer. In.	Thermometer. Out.	Observed N. P. D.
d. h. m.		Inches.	°	°	° ′ ″
1849. Dec. 20 11 42·4	125 Tauri Hist. Cel. 10069 ♂ Centre	30·087	76·9	76·8	64 9 40·9 63 36 34·5 63 28 16·6
21 11 36·7	125 Tauri Hist. Cel. 10069 ♂ Centre	30·094	77·7	77·8	64 9 40·9 63 36 35·0 63 27 39·6
27 11 3·5	*118 Tauri ♂ Centre Hist. Cel 10069	30·097	76·0	78·0	64 56 39·5 63 26 50·8 63 26 10·7
29 10 52·7	*118 Tauri ♂ Centre Hist. Cel. 10069	30·043	74·0	77·0	64 56 39·7 63 27 32·5 63 26 11·4
1850. Jan. 2 10 31·6	B.A.C. 1648 ♂ Centre Hist. Cel. 10069	30·134	79·1	79·0	62 10 7·7 63 30 1·2 63 26 12·1
3 10 26·4	♂ Centre Hist. Cel. 10069	30·120	78·0	78·0	63 30 50·2 63 26 10·8
5 10 16·3	B.A.C. 1648 ♂ Centre B.A.C. 1754	30·112	78·4	78·4	62 10 9·4 63 32 38·6 63 8 36·8
9 9 56·7	♂ Centre B.A.C. 1754	29·998	79·7	79·7	63 36 40·6 63 8 35·9
10 9 51·9	B.A.C. 1562 ♂ Centre	30·032	78·3	78·0	63 44 58·6 63 37 44·2
11 9 47·2	♂ Centre *118 Tauri	30·048	77·8	76·5	63 38 51·0 64 56 40·5
14 9 33·5	♂ Centre *118 Tauri	30·023	78·7	76·8	63 42 0·5 64 56 41·8
15 9 29·1	B.A.C. 1562 ♂ Centre *118 Tauri	30·030	79·1	78·8	63 44 58·9 63 43 3·2 64 56 41·1
16 9 24·7	B.A.C. 1562 ♂ Centre *118 Tauri	30·050	78·4	77·9	63 44 59·4 63 44 4·3 64 56 42·2
17 9 20·4	B.A.C. 1562 ♂ Centre *118 Tauri	30·060	77·9	77·6	63 44 59·7 63 45 4·1 64 56 41·2
1852. Jan. 2 14 14·5	γ Cancri ♂ Centre H.C. 18105	30·142	77·7	77·6	67 57 57·2 68 54 3·8 68 56 3·3
8 13 44·3	γ Cancri G. 485 ♂ Centre	30·046	76·4	76·3	67 58 0·3 68 13 34·6 68 13 27·9

Madras Mean Time.	Names.	Barometer.	Thermometer. In.	Thermometer. Out.	Observed N. P. D.
d. h. m.		Inches.	°	°	° ′ ″
1852. Jan. 10 13 33·8	γ Cancri G. 480 ♂ S.L.	30·037	77·8	77·7	67 58 1·7 68 2 52·6 67 59 22·8
15 13 6·9	32 Cancri γ — ♂ N.L.	30·065	73·9	73·7	65 22 50·1 67 58 0·5 67 22 55·5
16 13 1·4	32 Cancri ♂ S.L. H.C. 17528	30·030	75·6	75·5	65 22 48·7 67 16 4·2 67 11 14·9
17 12 55·9	32 Cancri ♂ N.L.	30·086	76·9	76·4	65 22 50·3 67 8 37·9
19 12 44·8	λ Cancri 32 — ♂ N.L.	30·076	75·1	74·8	65 28 50·0 65 22 49·9 66 54 36·3
20 12 39·3	λ Cancri 32 — ♂ S.L.	30·084	77·5	77·5	65 28 49·1 65 22 49·9 66 48 7·2
21 12 33·7	λ Cancri υ^2 — ♂ S.L.	30·102	78·7	78·7	65 28 49·8 65 23 18·5 66 41 19·4
22 12 28·1	υ^2 Cancri ♂ S.L.	30·119	78·8	78·9	65 23 18·9 66 34 44·6
23 12 22·5	λ Cancri υ^2 — ♂ N.L.	30·139	79·6	79·6	65 28 49·1 65 23 17·0 66 27 53·5
24 12 16·9	λ Cancri υ^1 — ♂ S.L.	30·186	79·2	79·2	65 28 47·8 64 56 54·0 66 21 54·4
26 12 5·7	λ Cancri υ^1 — ♂ S.L.	30·178	78·3	78·3	65 28 46·1 64 56 52·7 66 9 48·8
27 12 0·1	λ Cancri ♂ N.L.	30·176	78·3	78·3	65 28 47·1 66 3 43·0
28 11 54·5	B.A.C. 2703 λ Cancri ♂ S.L.	30·180	78·0	77·5	67 6 9·9 65 28 47·5 65 58 33·3
29 11 48·9	B.A.C. 2703 λ Cancri ♂ N.L.	30·134	76·6	76·1	67 6 10·2 65 28 47·1 65 52 46·2
30 11 43·3	B.A.C. 2703 λ Cancri ♂ S.L.	30·115	75·9	75·6	67 6 10·8 65 28 49·8 65 48 4·6
31 11 37·8	B.A.C. 2703 λ Cancri ♂ N.L.	30·146	76·6	76·6	67 6 11·2 65 28 49·3 65 42 49.0

* 2d Star observed.

Madras Mean Time.	Names.	Barometer.	Thermometer. In.	Thermometer. Out.	Observed N. P. D.
1852. d. h. m.		Inches.	°	°	° ′ ″
Feb. 2 11 26·8	λ Cancri ♂ S.L.	30·103	74·7	74·4	65 28 47·3 65 34 2·7
3 11 21·3	λ Cancri ♂ N.L. υ^2 Cancri	30·110	76·3	76·2	65 28 46·5 65 29 30·7 65 19 55·1
4 11 15·9	♂ S.L. υ^2 Cancri	30·138	77·8	77·7	65 25 54·9 65 19 54·3
5 11 10·5	♂ N.L. υ^2 Cancri 32 —	30·182	79·0	78·8	65 21 51·0 65 19 53·2 65 22 46·3
6 11 5·1	♂ S.L. υ^2 Cancri 32 —	30·180	79·2	79·3	65 18 45·5 65 19 53·8 65 22 48·4
7 10 59·8	♂ N.L. υ^2 Cancri 32 —	30·115	79·3	79·5	65 15 14·9 65 19 53·0 65 22 45·6
9 10 49·3	B.A.C. 2703 ♂ N.L. λ Cancri	30·126	76·9	76·8	67 5 10·5 65 9 32·7 65 28 46·8
10 10 44·1	84 Gemin. ♂ S.L. λ Cancri	30·119	77·3	76·5	67 15 9·7 65 7 23·2 65 28 47·0
11 10 38·9	H.C. 15707 ♂ N.L. λ Cancri	30·120	77·4	77·2	65 3 39·4 65 4 50·5 65 28 46·0
12 10 33·7	H.C. 15707 ♂ S.L. λ Cancri	30·112	78·0	78·0	65 3 48·2 65 3 8·5 65 28 46·1
13 10 28·7	♂ N.L. λ Cancri	30·119	78·3	78·4	65 1 3·5 65 28 45·5
1852. Feb. 14 10 23·7	H.C. 15707 ♂ S.L. λ Cancri	30·121	78·5	78·7	65 3 31·3 64 59 52·2 65 28 45·8
16 10 13·8	♂ S.L. λ Cancri	30·097	79·5	79·7	64 57 27·1 65 28 46·0
17 10 8·9	♂ N.L. λ Cancri	30·088	79·9	80·0	64 56 15·2 65 28 45·1
19 9 59·3	♂ N.L. λ Cancri	30·111	80·2	80·3	64 55 9·9 65 28 45·5
21 9 50·0	♂ N.L. λ Cancri	30·078	79·0	79·5	64 54 51·3 65 28 41·6
23 9 40·9	82 Gemin. ♂ N.L.	30·150	80·2	80·3	66 27 36·7 64 55 20·9
24 9 36·4	82 Gemin. ♂ S.L. λ Cancri	30·124	80·2	80·2	66 27 37·6 64 56 8·7 65 28 44·7
25 9 32·0	82 Gemin. ♂ N.L. B.A.C.2703	30·099	79·3	79·7	66 27 36·3 64 56 32·5 67 5 5·8
26 9 27·6	82 Gemin. ♂ S.L. B.A.C.2703	30·064	80·6	80·8	66 27 6·7 64 58 32·8 67 5 7·1
27 9 23·3	82 Gemin. ♂ S.L.	30·078	80·5	80·3	66 27 34·9 64 58 44·9
28 9 19·0	82 Gemin. ♂ S.L. B.A.C.2703	30·080	80·3	79·9	66 27 35·8 64 59 58·1 67 5 6·5

N. B.—The time given in the 1st column is that of the Observation of the Planet.

ECLIPSES

OF THE

SUN AND MOON

AND OF THE

SATELLITES OF THE PLANET JUPITER

TOGETHER WITH

OCCULTATIONS OF FIXED STARS BY THE MOON

IN THE YEARS 1848—1852,

AS OBSERVED AT THE MADRAS OBSERVATORY.

OBSERVATION OF THE ECLIPSE OF THE MOON, ON THE 19TH MARCH, 1848.

	Madras Mean Time. h.	m.	s.	Observer.		Madras Mean Time. h.	m.	s.	Observer.
Beginning of the Eclipse	12	37	11.3	A	First Total Immersion	13 13	41 41	49·6 49·6	A S
Touches Mare Humorum	12 12	50 50	19·1 20·1	S A	Last Total Immersion*	15 15	23 23	14·9 18·9	A S
Touches Keplerus	12 12	52 52	9·8 10·8	A S	Discovers Mare Humorum	15 15	31 31	38·5 41·5	A S
Touches Plato	12 12	59 59	6·7 8·7	A S	Discovers Aristarchus	15 15	32 32	49·3 53·3	A S
Touches Mare Serenitatis	13 13	6 6	37·5 39·5	A S	Leaves Aristarchus	15 15	34 34	13·1 16·1	A S
Touches Tycho	13	11	36·6	S	Leaves Keplerus	15 15	36 36	28·7 34·7	A S
Covers Tycho	13	13	0·4	S	Leaves Mare Humorum	15 15	38 38	2·5 5·5	A S
Touches a bright spot	13 13	19 19	55·3 56·3	A S	Discovers Tycho	15 15	46 46	31·1 33·1	A S
Covers do.	13	21	10·1	A	Leaves Tycho	15 15	48 48	0·8 0·8	A S
Touches Mare Crisium	13 13	28 28	45·8 47·8	A S	Discovers Plato	15 15	50 50	14·5 16·5	A S
Covers Mare Crisium	13 13	34 34	40·8 42·8	A S	Leaves Mare Vaporum	16 16	1 1	12·7 12·7	A S
Touches Langrenus	13 13	35 35	52·6 53·6	A S	Flying clouds prevented further observation				
Covers Langrenus	13	37	32·4	A	End of the Eclipse*	16 16	30 30	33·8 38·8	A S

A. with 5 feet Achromatic power 60 —— S. with 45 inch Telescope power 55.

I lost the commencement of the Eclipse owing to dew condensing on the object glass; Mr. R. Allan at the 5 feet remarks the same "as well as on account of the shadow being ill defined and confused." I resigned the Telescope to C. Sashoo Iyengar. The object glasses of both Telescopes were repeatedly wiped. Observations generally very unsatisfactory.

W. K. Worster, Captain, *Acting Astronomer.*

OBSERVATION OF THE ECLIPSE OF THE MOON, ON THE 8TH MARCH, 1849.

	Madras Mean Time h.	m.	s.	Observer.		Madras Mean Time. h.	m.	s.	Observer.
Covers of a bright spot	17	22	33.8	A	Touches Mare Vaporum	17	33	46·0	A
Covers Keplerus	17	23	33·7	"	Touches Palus Somni	17	39	30·7	"
Touches Mare Nectaris	17	32	2·3	"	Touches Mare Serenitatis	17	47	9·3	"

Observed with the 5 feet Achromatic, power 60.

Flying clouds prevented the commencement of the Eclipse being observed and during the whole time rendered the observations unsatisfactory. The above are the only ones worthy of record, but are still of doubtful value.

* Flying clouds.

OBSERVATION OF THE ECLIPSE OF THE MOON ON THE 2ND SEPTEMBER, 1849.

	Madras Mean Time.	Obser-ver.		Madras Mean Time.	Obser-ver.
	h. m. s.			h. m. s.	
Leaves Eudoxus	11 43 46·7	A	End of the Eclipse	11 55 5·8	A
Do. Lacus Somniorum	11 45 32·4	,,			

Observed with the 5 feet Achromatic, power 60.

The time of beginning could not be noted, or the spots observed, as it was cloudy throughout the Eclipse, except for a short time when the clouds having moved away a little, the above observations were made. The Umbra not being very well defined, but somewhat confused with the Penumbra, the observations are unsatisfactory and cannot be depended upon.

OBSERVATION OF THE ECLIPSE OF THE SUN, ON THE 11TH AND 12TH FEBRUARY, 1850.

	Madras Mean Time.	Obser-ver	Telescope.	Power.
	d. h. m. s.			
Beginning of the Eclipse	11 22 39 23·9	J	45 inch	60

At this time the Eclipse had already commenced, the sun having just emerged from the clouds; true time of contact probably 15 seconds earlier.

At greatest obscuration (about 0^h 9^m) the distance of the cusps measured 29^r·32 of Troughton's Micrometer: value of 1 rev. = 44″·20.

	Madras Mean Time.	Obser-ver.		
	d. h. m. s.			
End of the Eclipse	12 1 39 17·1	S	45 inch	55
	1 39 18·1	V	5 foot	60
	1 39 31·8	J	45 inch	60

My observation of the last contact was good, the indentation being clearly seen 3 seconds before; the differences in the time are therefore unaccountable, as S. and V. both considered their observations satisfactory.

OBSERVATION OF THE ECLIPSE OF THE MOON, ON THE 17TH JANUARY, 1851.

	Madras Mean Time.	Obser-ver.		Madras Mean Time.	Obser-ver.
	h. m. s.			h. m. s.	
Beginning of the Eclipse.*	9 0 26·8	S	Touches Mare Serenitatis	9 27 41·4	B
Do.*	9 0 28·8	B		9 27 44·4	V
Do.*	9 0 36·8	V			
			Touches Lacus	9 32 49·5	B
Touches Mare Frigoris	9 8 16·6	V		9 32 51·5	V
Covers Mare Frigoris	9 11 13·1	V	Touches Mare Imbrium	9 37 40·7	V
Touches Plato	9 13 34·7	V	Covers Lacus	9 39 42·4	V
	9 13 35·7	B			
Covers Plato	9 15 4·5	V			
	9 15 5·5	S			
	9 15 6·4	B			

* Flying clouds.

OBSERVATION OF THE ECLIPSE OF THE MOON, ON THE 17TH JANUARY 1851, (Continued.)

	Madras Mean Time.			Obser-ver.
	h.	m.	s.	
Covers Copernicus	9	39	55·4	B
Covers Mare Serenitatis	9	49	18·8	V
Touches Mare Crisium	9	50	5·7	B
	9	50	10·7	V
Covers Mare-Crisium	10	5	1·2	B
	10	5	6·2	V
	10	5	6·2	R
Leaves Keplerus	10	13	4·9	R
Leaves Copernicus	10	22	13·4	R
	10	24	38·0	B
Leaves a small spot	10	32	7·8	V
	10	32	11·7	B
Leaves Archimedes	10	48	4·1	R
Leaves Mare Imbrium	10	59	45·2	R
	10	59	47·2	B
	10	59	52·2	V
Leaves Mare Serenitatis	11	6	51·1	R
	11	6	53·1	B
	11	6	56·0	V
Leaves Posidonius	11	8	55·7	R
	11	9	0·7	V
Leaves Mare Crisium	11	15	4·7	R
	11	15	8·7	V
	11	15	9·7	B
End of the Eclipse	11	21	28·6	R
	11	21	43·6	V
	11	23	1·4	B

V. with 5 feet Achromatic, power 60

B. with 45 inch Telescope, power about 55.

S. and R. with 45 inch Telescope, power 100

J with 7 feet Equatorial, power 75.

	Madras Mean Time.			Obser-ver.
	h.	m.	s.	
Beginning of the Eclipse*	9	2	12·3	J
Touches Mare Imbrium	9	9	41·0	„
Touches } Plato	9	13	40·4	„
Covers } Plato	9	15	55·0	„
Touches } Aristarchus	9	19	16·4	„
Covers } Aristarchus	9	20	19·2	„
Touches Mare Serenitatis	9	27	48·0	„
Touches } Eratosthenes	9	29	22·7	„
Covers } Eratosthenes	9	29	45·7	„
Touches } Aristoteles	9	35	44·6	„
Covers } Aristoteles	9	37	6·4	„
Covers Mare Imbrium	9	38	28·2	„
Touches Copernicus	9	40	55·7	„
Touches } Archimedes	9	45	49·9	„
Covers } Archimedes	9	47	54·6	„
Touches } Keplerus	9	48	34·5	„
Covers } Keplerus	9	52	23·8	„
Covers Copernicus	9	50	39·1	„
Touches Mare Crisium	9	52	33·9	„
Uncovers } Keplerus	9	57	33·0	„
Leaves } Keplerus	10	0	32·4	„
Touches Menelaus	10	10	0·9	„
Uncovers Copernicus	10	12	54·4	„
Covers Menelaus.†	10	16	29·8	„
Leaves Copernicus	10	21	48·9	„
Leaves Aristarchus	10	23	48·5	„
Leaves Menelaus	10	27	27·9	„

* Flying clouds, uncertain.

† Uncertain, this being about the limit of the Eclipse.

OBSERVATION OF THE ECLIPSE OF THE MOON, ON THE 20TH DECEMBER, 1852.

	Madras Mean Time. h.	m.	s.	Observer.
Touches Mare Serenitatis	6	15	36·0	S
	6	15	41·0	R
Touches Mare Crisium	6	28	3·6	S
	6	28	13·7	R
Leaves Mare Serenitatis	6	47	54·9	S
Leaves Grimaldus	6	50	19·5	S
Leaves Mare Vaporum	7	3	7·0	S
Leaves Mare Crisium	7	9	35·9	S
	7	10	0·8	R
Leaves Mare Humorum	7	24	38·0	S
Leaves Tycho	7	31	31·7	R
	7	31	41·8	S
Leaves Petavius	7	43	4·6	S
End of the Eclipse	7	53	57·6	S
	7	54	37·6	R

S. with 5 feet Achromatic, power 60.

R. with 45 inch Telescope, power 55

Flying clouds at intervals, but the Observations are satisfactory

	Madras Mean Time. h.	m.	s.	Observer.
Touches Aristarchus	6	14	48·0	J
Covers do.	6	20	48·0	"
Covers Menelaus	6	23	48·0	"
Touches Mare Crisium	6	29	0·0	"
Covers Eratosthenes	6	33	48·0	"
Leaves do.	6	46	18·0	"
Leaves Menelaus	6	47	48·0	"
Leaves Copernicus	6	51	53·0	"
Leaves Mare Crisium	7	9	28·0	"
Leaves Grimaldus	7	10	38·0	"
Leaves Mare Nectaris	7	39	38·0	"
Leaves Petavius	7	47	58·0	"
End of the Eclipse	7	52	43·0	"

J. with the 45 inch Dollond, power 40.

Frequently obscured by clouds.

The letters set against the above Observations refer to the following observers.

J. to W. S. Jacob.
A. to Mr. R. Allan.
V. to C. Veerasawmy Pillay.
S. to C. Sashoo Iyengar.
B. to P. Baboo Naidoo.
R. to C. Ragoonatha Chary.

ECLIPSES OF THE SATELLITES OF JUPITER.

Date.		Satellites.	Im. or Em.	Telescope.	Power	Madras Mean Time.			REMARKS.	Observer.
1847.						*h.*	*m.*	*s.*		
Sept.	20	I	Immersion ..	5 feet	110	16	23	45·6		A
„	27	II	Immersion ..	5 feet	110	13	47	32·7		A
Nov.	5	I	Immersion ..	5 feet	110	16	39	38·8	Planet in the Zenith.	A
„	23	II	Immersion ..	5 feet	110	10	38	55·5		S
Dec.	9	IV	Emersion ..	5 feet	110	11	47	7·8	Good.	S
1848.										
Jan.	8	I	Emersion ..	5 feet	110	11	55	57·7	Planet on the Meridian, Satellite near the body, unsatisfactory.	A
„	15	I	Emersion ..	5 feet	110	13	49	4·6	Good.	A
„	19	II	Emersion ..	5 feet	110	10	22	8·1	Good.	A
„	22	I	Emersion ..	5 feet	110	15	43	38·6	Satisfactory.	A
„	24	I	Emersion ..	5 feet	110	10	12	20·4	Not very satisfactory, flying clouds.	A
„	25	III	Emersion ..	5 feet	110	9	37	14·1	Haze, yet pretty good.	A
„	26	II	Emersion ..	5 feet	110	12	58	50·5	Good.	A
„	31	I	Emersion ..	5 feet	110	12	6	52·7	Satisfactory.	A
Feb.	1	III	Emersion ..	5 feet	110	13	37	14·9	Good.	S
„	2	I	Emersion ..	5 feet	110	6	35	37·8	Good.	A
„	„	II	Emersion ..	5 feet	110	15	36	5·6	Very good.	S
„	7	I	Emersion ..	5 feet	110	14	1	57·7	Satisfactory.	S
„	9	I	Emersion ..	5 feet	110	8	30	29·0		A
„	14	IV	Emersion ..	5 feet	110	12	24	51·5	Not satisfactory, faint.	S
„	16	I	Emersion ..	5 feet	110	10	25	30·8	Good observation.	B
„	23	I	Emersion ..	5 feet	110	12	20	46·3	Satisfactory.	S
March	8	III	Emersion ..	5 feet	110	9	39	0·5	Planet high, good observation.	A
„	10	I	Emersion ..	5 feet	110	10	39	47·1	Convenient altitude, good observation.	A
„	16	II	Emersion ..	5 feet	110	7	15	10·1	Good observation.	B
„	23	II	Emersion ..	5 feet	110	9	51	7·1		A
April	11	I	Emersion ..	5 feet	110	7	19	34·5		A
„	20	III	Emersion ..	5 feet	110	9	43	33·0	Very good observation.	B
„	24	II	Emersion ..	5 feet	110	9	31	56·4	Observation very satisfactory.	B
May	27	I	Emersion ..	5 feet	110	7	50	24·7		B
1849.										
Jan.	24	I	Immersion ..	5 feet	110	16	34	59·5	Satisfactory.	R
„	„	III	Immersion ..	5 feet	110	17	30	58·3	Unsatisfactory—Dew.	R
„	26	I	Immersion ..	5 feet	110	11	3	14·4		V
„	„	II	Immersion ..	5 feet	110	11	25	13·8		V
Feb.	2	I	Immersion ..	5 feet	110	12	57	37·3	Planet in the Zenith—Satellite close to the body—observation otherwise good.	S

ECLIPSES OF THE SATELLITES OF JUPITER, (*Continued.*)

Date.		Satellites.	Im. or Em.	Telescope.	Power.	Madras Mean Time.			REMARKS.	Observer.
1849.						*h.*	*m.*	*s.*		
Feb.	15	III	Emersion ..	5 feet	110	8	58	48·7	Thin haze around the planet, otherwise satisfactory.	A
„	20	I	Emersion ..	5 feet	110	7	57	15·6	Good.	A
„	„	II	Emersion ..	5 feet	110	11	27	17·8	Good.	B
„	27	I	Emersion ..	5 feet	110	9	51	14·9	Observation very good.	B
March	6	I	Emersion ..	5 feet	110	11	45	40·6	Planet very high—☽ near, good.	A
„	17	II	Emersion ..	5 feet	60	8	36	18·8	Good observation.	B
„	24	II	Emersion ..	5 feet	110	11	13	9·2	Thin haze, otherwise satisfactory.	A
„	30	III	Emersion ..	5 feet	110	8	52	47·9	Planet in the zenith—☽ light, otherwise satisfactory.	S
„	31	I	Emersion ..	5 feet	110	6	27	10·2	Faint, haze.	S
April	18	II	Emersion ..	5 feet	110	8	22	19·7	Planet in the zenith—satisfactory, nothwithstanding thin haze.	A
„	21	I	Emersion ..	5 feet	110	12	11	41·9	Thin haze.	A
„	23	I	Emersion ..	5 feet	110	6	40	12·8	Planet in the zenith, good.	A
„	25	II	Emersion ..	5 feet	110	10	58	53·4	Observation satisfactory.	S
„	30	I	Emersion ..	5 feet	110	8	35	18·3	Moon near the planet—pretty good.	A
May	7	I	Emersion ..	5 feet	110	10	30	19·5	Convenient altitude—bright ☽ light—observation satisfactory.	A
„	12	III	Emersion ..	5 feet	110	8	48	39·3	Haze—otherwise satisfactory.	S
Nov.	21	I	Immersion ..	5 feet	60	13	39	16·5	Planet low and distorted—time uncertain to several seconds.	J
1850.										
Jan.	13	I	Immersion ..	5 feet	110	15	48	33·6	Pretty good.	J
„	15	I	Immersion ..	5 feet	110	10	16	40·8	Planet in the horizon—tremulous observation unsatisfactory.	V
Feb.	23	I	Immersion ..	5 feet	110	8	40	18·6	Convenient altitude—clear; bright ☽ light good observation.	V
March	9	IV	Emersion ..	5 feet	110	7	9	9·9	Definition bad, Satellite nearly in contact.	J
„	11	II	Emersion ..	5 feet	110	6	54	26·3	Satellite in contact with disk, limb violently agitated; not good.	J
„	„	I	Emersion ..	5 feet	110	9	9	56·1	Satellite near the body—good.	V
„	18	II	Emersion ..	5 feet	110	9	29	21·0	Satisfactory.	V
„	„	I	Emersion ..	5 feet	110	11	2	45·7		V
„	25	II	Emersion ..	5 feet	110	12	5	15·3	Unsatisfactory.	A
„	27	I	Emersion ..	5 feet	110	7	25	4·4	Good.	S
April	10	I	Emersion ..	5 feet	110	11	13	6·9		S
„	19	I	Emersion ..	5 feet	110	7	36	18·4	Haze—pretty good.	A
„	26	I	Emersion ..	5 feet	110	9	30	40·3	Good observation.	V
May	3	I	Emersion ..	5 feet	110	11	25	3·1	Good.	V
„	21	II	Emersion ..	5 feet	60	9	2	4·7	Unsatisfactory observation—haze.	B
June	4	I	Emersion ..	5 feet	110	8	0	41·0	Good observation.	B
„	11	I	Emersion ..	5 feet	110	9	55	36·6	Observation good.	B

ECLIPSES OF THE SATELLITES OF JUPITER, *(Continued.)*

Date.		Satellites	Im. or Em.	Telescope.	Power	Madras Mean Time.			REMARKS.	Observer.
1851.						*h.*	*m.*	*s.*		
Feb.	24	I	Immersion ..	5 feet	110	17	6	46·1	Satisfactory.	S
March	19	I	Immersion ..	5 feet	60	17	15	32·8	Haze.	R
April	4	I	Immersion ..	5 feet	110	15	31	3·6		V
,,	27	II	Emersion ..	5 feet	60	12	36	55·7	Haze—observation unsatisfactory.	R
May	20	III	Immersion ..	5 feet	60	6	37	16·9	Haze—good.	M
,,	22	I	Emersion ..	5 feet	110	12	31	7·0		V
,,	27	III	Emersion ..	5 feet	110	12	57	9·7		S
June	16	II	Emersion ..	5 feet	110	7	11	0·4	Planet in the zenith—strong breeze.	M
,,	23	II	Emersion ..	5 feet	110	9	33	10·0	Haze.	S
July	2	III	Emersion ..	5 feet	110	8	49	9·0		V
1852.										
April	1	I	Immersion ..	7 feet	200	10	58	10·9	Planet steady—diminution of light observed for about 40s. before disappearance.	J
,,	17	I {	Immersion ..	5 feet	110	9	14	11·8		S
			Immersion ..	7 feet	200	9	14	14·7		J
,,	20	II {	Immersion .	45 inch	55	8	31	37·5		M
			Immersion ..	5 feet	110	8	31	48·5		S
,,	24	I	Immersion ..	5 feet	110	11	7	48·6	Good observation.	S
,,	27	II	Immersion ..	5 feet	110	11	6	31·3		S
May	26	I {	Emersion ..	5 feet	60	9	49	35·6		B
			Emersion ..	45 inch	55	9	49	43·6		R
June	11	I	Emersion ..	5 feet	110	8	6	30·2	Haze.	S
Sept.	27	I	Emersion ..	5 feet	60	7	15	29·1	Tremulous, observation unsatisfactory.	R

	OCCULTATION OF STARS AND PLANETS BY THE MOON.	Madras Mean Time.			Observer.
1848.		h.	m.	s.	
Jan. 10	Disappearance of a very bright star, 3d magnitude,* behind the Moon's dark limb, observed with the 5 feet Achromatic, power 110: at Very good observation.	7	30	14·6	B
„ 12	Disappearance of a star behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at Very good observation.	7	0	25·4	B
„ 17	Disappearance of a small star, 6½ magnitude, behind the Moon's dark limb, observed with the 5 feet Achromatic, power 110: at Satisfactory observation.	7	21	58·2	B
„ „	Disappearance of a star, 6th magnitude (120 Tauri?), behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at Satisfactory observation.	10	23	8·2	B
Mar. 16	Disappearance of *o* Leonis behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at	6	48	19·5	W
Apr. 7	Disappearance of a small star behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at	8	8	6·6	V
„ „	Disappearance of a bright star behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at	8	11	49·0	V
May 6	Disappearance of a very faint star behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at Observation unsatisfactory.	7	29	47·1	B
„ „	Disappearance of a small star, 6½ magnitude, behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at Observation satisfactory.	7	53	47·1	B
„ „	Disappearance of a bright star, 5th magnitude, behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at Observation good.	8	12	1·6	B
„ „	Disappearance of a star, 6th magnitude, behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at Good observation.	8	22	19·4	B
Sept. 8	Disappearance of c^2 Sagittarii behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at Good observation.	7	38	10·0	B
1849.					
Feb. 26	Disappearance of a star behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at Very good.	7	35	32·1	A
Mar. 1	Disappearance of a bright star, (75 Tauri?), behind the Moon's dark limb, observed with 5 feet Achromatic, power 60: at Very good.	9	6	29·1	V
„ „	Disappearance of a small star behind the Moon's dark limb, observed with 5 feet Achromatic, power 60: at Very good.	9	11	12·3	W
„ 2	Disappearance of a star behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at Very satisfactory observation.	11	11	54·0	A
„ 28	Disappearance of a bright star behind the Moon's dark limb, observed with 5 feet Achromatic, power 60: at Good	8	12	44·1	S
„ 30	Disappearance of a bright star behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at Observation very satisfactory.	9	28	19·1	A

* The star was probably B.A.C. 7986, though the magnitude must have been greatly overrated. The magnitudes are given as entered in the Observation book, but are generally too high.

	OCCULTATION OF STARS AND PLANETS BY THE MOON.	Madras Mean Time.			Obser-ver.
1849.		h.	m.	s.	
Apr. 26	Disappearance of a bright star, behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: Very satisfactory. at	7	32	1·3	A
„ 27	Disappearance of a bright star, behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: Very satisfactory. at	7	58	48·8	A
„ 30	Disappearance of a bright star, (B. A. C. 3344 ?), behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: Very satisfactory. at	8	36	28·2	A
June 25	Disappearance of a small star, behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: Unsatisfactory. at	7	58	37·4	V
Augt. 23	Disappearance of B.A.C. 4794, behind the Moon's dark limb, observed with 5 feet Achromatic, power 60: Instantaneous. at	6	54	33·4	J
Oct. 1	Occultation of Saturn observed with 5 feet Achromatic, power 110: Very hazy, Planet scarcely visible.				
	External contact of ring, at	15	44	17·2	„
	Do. of Planet, at	15	45	15·3	„
	Internal contact lost by clouds				
	At Emersion 1st appearance of Planet, at	16	48	1·9	„
	External contact; Rather dim but no distortion, at	16	48	30·9	„
	Do. of ring, at	16	49	23·2	„
12	Occultation of Jupiter observed with 5 feet Achromatic, power 60:				
	Immersion. 1st contact. at	22	8	48·2	„
	At bright limb. total immersion.* at	22	10	43·2	„
	Emersion. 1st appearance.† at	23	16	51·0	„
	At dark limb. external contact. at	23	18	27·1	„
	The Moon's limb appeared sharp and well defined upon Jupiter, but the Planet's limb was not very well defined.				
„ 20	Disappearance of a bright star behind the Moon's dark limb (NE), observed with 5 feet Achromatic, power 110: Observation very satisfactory. at	6	25	18·2	V
„ „	Disappearance of a faint star behind the Moon's dark limb (SE), observed with 5 feet Achromatic, power 110: at	6	28	37·7	V
„ „	Disappearance of a bright star behind the Moon's dark limb (E), observed with 5 feet Achromatic, power 110: Observation very satisfactory. at	7	46	46·7	V
„ 23	Disappearance of a star behind the the Moon's dark limb (N), observed with 5 feet Achromatic, power 110: Good observation. at	8	29	40·5	V
„ 24	Disappearance of a star, 5th magnitude (B.A.C. 7097 ?), behind the Moon's dark limb (E), observed with 5 feet Achromatic, power 100: at	9	45	34·0	B
Nov. 19	Disappearance of a star, 6th magnitude, behind the Moon's dark limb, observed with 5 feet Achromatic, power 240: Observation good. at	7	28	24·6	B

* Uncertain to some seconds there being a thick air-haze.

† At first appearance Jupiter seemed to be spread out along the ☾'s limb, but when partially emerged there was no perceptible distortion

Date	OCCULTATION OF STARS AND PLANETS BY THE MOON	Madras Mean Time h.	m.	s.	Observer.
1849. Nov. 20	Disappearance of a star, 5th magnitude, behind the Moon's dark limb, apparently to the (N.E.) observed with 5 feet Achromatic, power 110: Observation good. at	6	17	47·9	B
" 21	Disappearance of a star, 7½ magnitude, at Moon's northern cusp; observed with 5 feet Achromatic, power 110. at	6	25	4·3	J
	The star seemed to hang on the limb, for near a minute before disappearing, without any diminution or distortion, but the disappearance was decidedly gradual, occupying perhaps 0·2 s.				
Dec. 20	Disappearance of a star, 8½ magnitude, at Moon's dark limb, near centre, observed with 5 feet Achromatic, power 110: at pretty good, star's light slightly reduced for 2 or 3 seconds before immersion.	6	47	42·0	J
1850. Jan. 21	Disappearance of a star, 5th magnitude, at Moon's (N.E.) limb, observed with 5 feet Achromatic, power 110. at The star appeared to hang on the limb, for near ½ minute before disappearing. Observation very good.	8	38	6·3	B
" 25	Disappearance of a star, 4th magnitude, (B.A.C 2004?), behind the Moon's eastern limb, observed with 5 feet Achromatic, power 110: Observation very good. at	7	0	11·0	B
Feb. 15	Disappearance of a bright star behind the Moon's dark limb near south, observed with 5 feet Achromatic, power 110: Good observation. at	7	32	36·8	V
" 16	Disappearance of a bright star, (B.A.C. 388,) behind the Moon's dark limb (South East), observed with 5 feet Achromatic, power 110: at Instantaneous—very good observation.	8	40	44·9	V
Mar. 19	Disappearance of a star, 5th magnitude, in Taurus behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at	6	55	39·4	B
" "	Disappearance of a star, 5th magnitude, in Taurus behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at	7	10	12·1	B
" 20	Disappearance of a star, 7th magnitude, behind the Moon's dark limb (E), observed with 5 feet Achromatic, power 110: at	8	39	52·1	R
" "	Disappearance of a star, 5th magnitude, behind the Moon's dark limb (E), observed with 5 feet Achromatic, power 110: at	8	41	34·3	R
" 21	Disappearance of a star, 5th magnitude, behind the Moon's dark limb (SE), observed with 5 feet Achromatic, power 110: at	7	9	33·7	S
" "	Disappearance of a star, 6th magnitude, behind the Moon's dark limb (E), observed with 5 feet Achromatic, power 110: at	8	7	11·2	S
" "	Disappearance of a star behind the Moon's dark limb (E), observed with 5 feet Achromatic, power 110: at	9	12	13·6	V
" 22	Disappearance of B.A.C. 2505 behind the Moon's dark limb (NE), observed with 5 feet Achromatic, power 110: Very satisfactory observation. at	8	19	1·0	A
" 23	Disappearance of a star, 7th magnitude, behind the Moon's dark limb (E), observed with 5 feet Achromatic, power 110: Very satisfactory observation. at	11	29	53·8	A
May 17	Disappearance of a star, 6th magnitude, behind the Moon's dark limb (E), observed with 5 feet Achromatic, power 60: Satisfactory observation. at	8	3	23·5	S
" 18	Disappearance of a star, of about 5th magnitude, behind the Moon's dark limb (E), observed with 5 feet Achromatic, power 60: (Immersion gradual) at	10	49	27·0	A
" "	Disappearance of Regulus behind the Moon's dark limb (E), observed with 5 feet Achromatic, power 60: at Did not at all lose its brilliancy, but when very near the limb it appeared distorted or rather elongated; the immersion was instantaneous—Clear, very good observation.	10	54	41·4	A

	OCCULTATION OF STARS AND PLANETS BY THE MOON.	Madras Mean Time.			Observer.
		h.	m.	s.	
1850.					
May 18	Reappearance of Regulus behind the Moon's bright limb (W), observed with 5 feet Achromatic, power 60: at	11	52	33·6	A
	No distortion whatever now, but the image was perfectly round; Emersion instantaneous—Clear, very good observation.				
Oct. 8	Disappearance of a small star behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at	6	33	56·6	B
" "	Disappearance of a small star behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at	6	35	8·4	B
Dec. 6	Disappearance of a star, 7th magnitude, behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: Good observation. at	6	41	4·8	B
" "	Disappearance of a star, 6½ magnitude, behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: Good observation. at	6	43	43·4	B
" "	Disappearance of a star, 4th magnitude, behind the Moon's dark limb, observed with 5 feet Achromatic, power 110 Good observation. at	6	48	58·0	B
1851.					
Jan. 8	Disappearance of a star, 6th magnitude, behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: Observation good. at	9	44	6·9	B
" 10	Disappearance of a star, 5th magnitude, behind the Moon's dark limb (E), observed with 5 feet Achromatic, power 110: at	8	6	43·4	V
" "	Disappearance of a star, 4th magnitude, behind the Moon's dark limb, observed with 5 feet Achromatic, power 110: at	9	48	41·1	B
" 15	Disappearance of χ^1 Orionis, behind the Moon's dark limb (NE), observed with 5 feet Achromatic, power 60: Good observation. at	7	28	10·2	V
" "	Reappearance of χ^1 Orionis, behind the Moon's bright limb (W), observed with 5 feet Achromatic, power 60: Good observation. at	8	40	45.2	V
" 16	Disappearance of a star, 7th mag. 90″ N. of ζ Geminorum, behind the Moon's dark limb, observed with 7 feet Equatorial, power 125 at Not very certain.	10	53	34·8	J
" "	Do. of ζ Geminorum with do. Instantaneous. at	10	56	30·8	J
" "	Do. do. with 5 feet Achromatic, power 60. Good observation. at	10	56	32·1	B
" "	Do. do. with 45 inch. at	10	56	32·8	R
" "	Reappearance of ζ Geminorum behind the Moon's enlightened limb, observed with 7 feet Equatorial.—No projection or distortion; star seen suddenly in contact with the limb, at	12	13	25·9	J
" "	Do. do. with 45 inch Telescope. at	12	13	40·6	R
" "	Do. do. with 5 feet Achromatic, power 60. at	12	13	43·6	B
" 24	Disappearance of ξ^2 Libræ, behind the Moon's bright limb, observed with 5 feet Achromatic, power 60:—Instantaneous. at	17	5	47·9	J
" "	Reappearance of ξ^2 Libræ behind the Moon's dark limb (near the Northern Cusp), observed with 45 inch Telescope. at	17	52	42·2	R
	Very good observation, the limb well defined, and the star appeared to stay at the same point for about 2 minutes, or to move along the Moon's border.				
Feb. 3	Disappearance of a star, 6th magnitude, behind the Moon's dark limb, observed with 45 inch Telescope. Very good observation. at	7	7	59·0	R
" "	Do. do. do. with 5 feet Achromatic, power 60. Good observation. at	7	7	59·2	B

1851.	OCCULTATION OF STARS BY THE MOON.	Madras Mean Time. h.	m.	s.	Observer.
Feb. 5	Disappearance of a star (5th magnitude B.A.C. 81?) behind the Moon's dark limb, observed with 45 inch Telescope. at Very good observation.	7	36	34·5	R
" "	Do. do. do. with 5 feet Achromatic, power 60: at Very good observation.	7	36	34·6	B
" 6	Disappearance of a star, 5th magnitude, (B.A.C. 344?) behind the Moon's dark limb, observed with 5 feet Achromatic, power 60: Very good observation. at	8	29	3·7	B
" "	Do. do. do. with 45 inch Telescope. at	8	29	3·8	R
" 7	Disappearance of a star (6th magnitude) behind the Moon's dark limb, observed with 45 inch Telescope. Good observation. at	7	5	55·4	R
" "	Do. do. with 5 feet Achromatic, power 60: Very good observation. at	7	5	55·6	B
" 10	Disappearance of a star of about 6th magnitude behind the Moon's dark limb, observed with 5 feet Achromatic, power 60: Good observation, but the limb was not well defined. at	7	54	12·6	R
" 12	Disappearance of a star of 5½ magnitude (B.A.C. 2080?) behind the Moon's dark limb, observed with 45 inch Telescope. The dark limb was invisible. Good observation. at	7	27	36·0	R
" "	Do. do. with 5 feet Achromatic, power 60: do. do. at Good observation.	7	27	36·2	B
" 14	Disappearance of δ Cancri at Moon's dark limb (E), with 5 feet Achromatic, power 60: Clear, observation very satisfactory. at	13	17	51·4	V
Mar. 6	Disappearance of a star, 6½ magnitude, behind the Moon's dark limb (SE), observed with 5 feet Achromatic, power 60: at	7	8	58·8	V
" "	Disappearance of a star, 6th magnitude. at	7	9	28·7	V
" 8	Disappearance of a star (5th magnitude) at Moon's dark limb (NE), with 5 feet Achromatic, power 60: at	7	18	23·1	V
" 12	Disappearance of a star (6th magnitude) at Moon's dark limb (SE), with 5 feet Achromatic, power 60: at	7	52	22·5	S
" 20	Reappearance of ξ^2 Libræ behind the Moon's dark limb (NW), with 5 feet Telescope, power 60: at	9	42	17·0	V
April 7	Disappearance of χ^1 Orionis (of 4½ magnitude,) behind the Moon's dark limb (SE), observed with 7 feet Equatorial, power 125. Instantaneous, dark limb barely visible; the star made a sudden move or wriggle about ½ second before disappearing. at	10	24	8·0	J
" "	Do. do. with 5 feet Achromatic, power 60: Good observation. at	10	24	8·7	V
" 17	Disappearance of γ Libræ at Moon's bright limb, with 5 feet Achromatic, power 60: Very good observation. at	11	59	33·1	R
June 24	Disappearance of B.A.C. 845 behind the Moon's bright limb, observed with 5 feet Achromatic, power 110: at The star disappeared instantaneously. Observation good.	16	33	44·9	R
" "	Reappearance of Do. behind the Moon's dark limb, observed with 5 feet Achromatic, power 60: at The limb and star extremely faint by day light, the time doubtful to 4 or 5 seconds, haze.	17	36	32·2	R
Oct. 7	Reappearance of ψ^2 Aquarii behind the Moon's bright limb (W), with 5 feet Achromatic, power 60: Rather hazy—Not satisfactory. at	7	47	3·9	S
" 21	Disappearance of ν Virginis behind the Moon's bright limb (E), with 5 feet Achromatic, power 60: Good observation. at	17	7	38·5	S
Nov. 27	Disappearance of a star (of about 7½ magnitude) behind the Moon's dark limb, with 5 feet Achromatic, power 60: at	7	37	8·5	R

	OCCULTATION OF STARS BY THE MOON.		Madras Mean Time.		Observer.
		h.	*m.*	*s.*	
1851.					
Nov. 27	Disappearance of a star, 6th magnitude, doubtful. at	7	37	51·4	R
" "	Disappearance of a star (of about 7th magnitude), behind the Moon's dark limb, with 5 feet Achromatic, power 60: at	8	24	53·6	V
Dec. 19	Disappearance of η Libræ, behind the Moon's bright limb (E), with 5 feet Achromatic, power 60: Good observation. at	17	55	6·1	S
1852.					
Jan. 28	Disappearance of a star of about 4½ magnitude behind the Moon's dark limb, with 5 feet Achromatic, power 60: at	7	34	6·4	S
Feb. 2	Disappearance of a star of about 5th magnitude behind the Moon's dark limb, with 5 feet Achromatic, power 60: Good observation. at	7	36	23·6	R
" 25	Disappearance of a star of about 6th magnitude behind the Moon's dark limb, (about 15° from N. Point) with 5 feet Achromatic, power 60: at	7	45	4·0	R
" 26	Disappearance of a star of about 6th magnitude behind the Moon's dark limb, (about 75° from N. Point) with 5 feet Achromatic, power 60: Good observation. at	7	5	18·5	R
" "	Disappearance of a star of 5½ magnitude behind the Moon's dark limb, with 5 feet Achromatic, power 110: Good. at	8	10	41·2	S
Mar. 6	Disappearance of ν Virginis behind the Moon's bright limb (E), observed with 5 feet Achromatic, power 60: Moon in the horizon—haze. Observation unsatisfactory. at	6	49	58·3	M
" "	Reappearance of do. at	7	24	15·7	R
" 27	Disappearance of a star, (6th magnitude) behind the Moon's dark limb, observed with 5 feet Achromatic, power 60: Good observation. at	9	4	34·2	B
" 28	Disappearance of μ Geminorum behind the Moon's dark limb, observed with 7 feet Equatorial, power 125: at	2	59	8·7	J
	The star suffered a small diminution of light and was slightly agitated for about two seconds before disappearance, which was also not quite instantaneous.				
" "	Reappearance of do. observed with 7 feet Equatorial: Instantaneous, no projection, but the star seemed to hang on the limb for about 2^s. at	4	27	36·7	J
Apr. 3	Disappearance of c Virginis behind the Moon's dark limb (E), observed with 7 feet Equatorial, aperture 4 inches, power 200: Instantaneous, no distortion. at	9	1	38·4	J
" "	Do. do. with 5 feet Achromatic, power 60: Observation very satisfactory. at	9	1	38·7	B
" "	Reappearance of do. behind the Moon's enlightened limb (W), observed with 7 feet Equatorial, at	10	8	35·0	J
	Star seen nearly 1″ from limb, rather faint but no distortion.				
" "	Do. do. with 5 feet Achromatic, power 60: at	10	9	5·1	B
" 24	Disappearance of red star 6½ magnitude (B.A.C. 1987) observed with 7 feet Equatorial, power 169: at	6	53	42·0	J
	No projection or distortion, but the star seemed to slide behind the limb, occupying nearly 0^s·1 in disappearing.				
" "	Do. do. with 5 feet Telescope, power 60: at	6	53	42·4	R
" "	Reappearance of do. observed with 7 feet Equatorial, power 169: Instantaneous. at	7	38	8·7	J
" "	Disappearance of η Geminorum behind the Moon's dark limb (SE), observed with 5 feet Achromatic, power 60: at	8	16	35·8	S

	OCCULTATION OF STARS BY THE MOON.	Madras Mean Time.			Obser-ver.
1852.		h.	m.	s.	
April 24	Disappearance of η Geminorum behind the Moon's dark limb (SE), observed with 45 inch. at	8	16	36·3	M
" "	Do. do. with 7 feet Equatorial, power 169 : at Hazy—instantaneous.	8	16	36·4	J
" "	Reappearance of do. behind the Moon's bright limb observed with 5 feet Achromatic, power 60 : at Haze.	9	15	54·0	S
" 26	Disappearance of a star about 5½ magnitude (B.A.C. 2714 ?) behind the Moon's dark limb (SE), observed with 5 feet Achromatic, power 60 : at Rather hazy.	8	31	40·3	S
" 27	Disappearance of a star about 6½ magnitude behind the Moon's dark limb (E), observed with 5 feet Achromatic, power 60 : at Good.	8	39	55·0	S
May 13	Disappearance of 33 Piscium behind the Moon's bright limb, observed with 5 feet Achromatic, power 60 : at Instantaneous, satisfactory, hazy.	15	48	42·5	R
" "	Reappearance of do. with do. behind the Moon's dark limb. at Very good observation—hazy.	16	20	24·0	R
Sept. 22	Reappearance of No. 6864 B.A.C. observed with 5 feet Achromatic, power 60 : at Very good observation.	11	23	51·1	R
Oct. 30	Reappearance of s Tauri behind the Moon's dark limb (SW), observed with 5 feet Achromatic, power 60 : at Haze, not satisfactory.	7	59	13·8	S

W. refers to Captain W. K. Worster.
M. " to T. Moottoosawmy Pillay.

TRANSITS

OF

THE MOON

AND OF

STARS CULMINATING NEAR THERETO,

BETWEEN 1848 AND 1852,

OBSERVED AT THE MADRAS OBSERVATORY.

Date.	Names.	Observed Transit.	Obser-ver.
1848.		h. m. s.	
Jan. 13	μ Piscium	1 22 30·48	B
	Moon I. L.	1 26 47·90	„
	ξ^2 Ceti	2 20 22·29	„
„ 14	ξ^2 Ceti	2 20 23·03	B
	Moon I. L.	2 23 53·43	„
	δ Arietis	3 3 15·14	„
„ 17	ι Tauri	4 54 21·76	A
	Moon I. L.	5 22 20·59	„
	ζ Tauri	5 28 54·66	„
	η Geminor.	6 6 3·24	„
	μ ——	6 14 6·90	„
„ 18	η Geminor.	6 6 4·17	A
	μ ——	6 14 7·87	„
	Moon I. L.	6 22 28·81	„
	ζ Geminor.	6 55 27·38	„
	δ ——	7 11 24·37	„
„ 19	ζ Geminor.	6 55 28·55	A
	δ ——	7 11 25·43	„
	Moon I. L.	7 20 20·85	„
	ζ Cancri	8 3 52·32	„
„ 20	ζ Cancri	8 3 53·94	B
	(a) Moon I. L.	8 18 7·26	„
	Moon II. L.	8 19 21·04	„
	θ Cancri	8 23 19·82	„
„ 21	κ Cancri	8 59 55·84	A
	Moon II. L.	9 14 30·66	„
	π Leonis	9 52 35·96	„
	α ——	10 0 41·68	„
„ 22	π Leonis	9 52 37·28	A
	α ——	10 0 43·00	„
	Moon II. L.	10 6 9·00	„
	d Leonis	10 53 9·21	„
	χ ——	10 57 37·22	„
„ 25	Moon II. L.	12 30 25·60	A
	γ^1 Virginis	12 34 28 59	„
	θ ——	13 2 36·16	„
	α ——	13 17 42·62	„
„ 27	Moon II. L.	14 4 24·98	A
	λ Virginis	14 11 27·18	„
	α^2 Libræ	14 42 2·29	„
	δ ——	14 53 24·89	„
Feb. 12	λ Tauri	3 53 7·38	A
	Moon I. L.	4 4 33·76	„
	γ Tauri	4 12 0·50	„
	α ——	4 28 3·86	„
	ι ——	4 54 52·60	„
„ 16	k Geminor.	7 25 43·50	B
	κ ——	7 36 4·20	„
	Moon I. L.	7 57 18·86	„

Date.	Names.	Observed Transit.	Obser-ver.
1848.		h. m. s.	
Feb. 16	δ Cancri	8 36 50·28	B
	α^2 ——	8 50 58·16	„
„ 17	Moon I. L.	8 51 39·36	B
	ξ Leonis	9 24 34·02	„
„ 18	o Leonis	9 33 52·56	B
	Moon I. L.	9 43 48·86	„
„ 22	γ^1 Virginis	12 34 53·94	B
	Moon II. L.	12 58 59·60	„
	θ Virginis	13 3 1·29	„
	α ——	13 18 7·85	„
„ 23	α Virginis	13 18 9·46	B
	ζ ——	13 27 54·65	„
	Moon II. L.	13 46 3·83	„
	κ Virginis	14 5 45·31	„
	λ ——	14 11 51·46	„
„ 24	κ Virginis	14 5 46·67	B
	λ ——	14 11 52·76	„
	Moon II. L.	14 33 49·77	„
	β Libræ	15 9 49·19	„
	f^1 ——	15 26 51·45	„
Mar. 13	μ Geminor.	6 14 9·22	B
	γ ——	6 29 19·22	„
	Moon I. L.	6 43 8·04	„
	δ Geminor.	7 11 26·12	„
	κ ——	7 35 39·76	„
„ 14	δ Geminor.	7 11 27·00	B
	κ ——	7 35 40·54	„
	Moon I. L.	7 39 41·07	„
	θ Cancri	8 23 20·27	„
„ 15	Moon I. L.	8 34 1·33	A
	δ Cancri	8 36 27·68	„
	o Leonis	9 33 27·66	„
„ 16	ξ Leonis	9 24 11·75	A
	Moon I. L.	9 26 9·45	„
	o Leonis	9 33 28·61	„
	π ——	9 52 37 45	„
	α ——	10 0 42·96	„
„ 17	π Leonis	9 52 38·39	A
	α ——	10 0 43·94	„
	Moon I. L.	10 16 18·60	„
	d Leonis	10 53 10·58	„
	χ ——	10 57 38·47	„
„ 18	d Leonis	10 53 11·62	A
	χ ——	10 57 39·42	„
	Moon I. L.	11 4 53·98	„
	υ Leonis	11 29 39·15	„
	β Virginis	11 43 15·75	„
„ 19	υ Leonis	11 29 40·13	A

Date.	Names.	Observed Transit.	Obser-ver.
1848		h. m. s.	
Mar. 19	β Virginis	11 43 16·78	A
	Moon I. L.	11 52 25·29	„
	η Virginis	12 12 38·13	„
„ 20	μ Virginis	12 12 39·09	A
	γ^1 ——	12 35 28·87	„
	Moon II. L.	12 41 27·03	„
	θ Virginis	13 2 36·39	„
	α ——	13 17 42·87	„
„ 21	θ Virginis	13 2 37·54	A
	α ——	13 17 44·00	„
	Moon II. L.	13 28 26·82	„
	κ Virginis	14 5 20·02	„
	λ ——	14 11 26·20	„
„ 22	κ Virginis	14 5 21·23	A
	λ ——	14 11 27·25	„
	Moon II. L.	14 15 56·06	„
	α^2 Libræ	14 43 2·19	„
	β ——	15 9 23·38	„
„ 23	α^2 Libræ	14 42 3·54	A
	Moon II. L.	15 4 21·69	„
	β Libræ	15 9 24·83	„
„ 24	Moon II. L.	15 54 2·85	A
	χ Ophiuchi	16 18 49·10	„
	m Scorpii	16 33 23·01	„
„ 25	χ Ophiuchi	16 18 50·36	A
	m Scorpii	16 33 24·05	„
	Moon II. L.	16 45 12·63	„
	ν Serpentis	17 12 53·64	„
	o ——	17 33 29·17	„
Apr. 11	8 Cancri	7 57 34·26	A
	Moon I. L.	8 17 52·24	„
	29 Cancri	8 21 6·58	„
	α^2 ——	8 51 8·88	„
„ 12	A^2 Cancri	8 39 36·06	A
	α^2 ——	8 51 10·30	„
	Moon I. L.	9 10 53·56	„
	o Leonis	9 34 2·62	„
	α ——	10 1 16 80	„
„ 13	o Leonis	9 34 4·09	A
	Moon I. L.	10 1 30·35	„
	ρ Leonis	10 25 50·56	„
„ 14	Moon I. L.	10 50 14·74	B
	σ Leonis	11 14 22·22	„
	τ ——	11 21 11·80	„
„ 15	Moon I. L.	11 37 42·26	S
	π Virginis	11 54 11·11	„
	η ——	12 13 14·26	„
„ 17	θ Virginis	13 3 14·87	S

(a) Not very distinct.

Date.	Names.	Observed Transit.	Observer.
1848.		h. m. s.	
Apr. 17	Moon I. L.	13 11 15·59	S
	α Virginis	13 18 21·72	„
	m ——	13 34 18·34	„
„ 18	m Virginis	13 34 49·94	S
	Moon II. L.	14 0 31·88	„
	κ Virginis	14 6 59·30	„
	α^2 Libræ	14 43 40·59	„
	ξ^2 ——	14 49 43·44	„
„ 19	α^2 Libræ	14 43 42·13	S
	Moon II. L.	14 48 39·62	„
	β Libræ	15 10 3·16	„
„ 20	β Libræ	15 10 4·34	B
	f^1 ——	15 27 7·24	„
	Moon II. L.	15 37 59·73	„
May 10	Moon I. L.	9 44 6·83	B
	b^1 Leonis	10 17 36·48	„
	ρ ——	10 25 10·19	„
„ 11	b^1 Leonis	10 17 37·61	B
	ρ ——	10 25 11·49	„
	Moon I. L.	10 33 56·04	„
	σ Leonis	11 13 41·50	„
„ 12	σ Leonis	11 13 43·26	B
	Moon I. L.	11 21 55·63	„
	β Virginis	11 42 12·37	„
	η ——	12 12 33·85	„
„ 13	Moon I. L.	12 8 50·51	B
	η Virginis	12 12 35·35	„
	γ^1 ——	12 34 25·27	„
„ 15	α Virginis	13 17 42·70	A
	m ——	13 34 9·71	„
	Moon I. L.	13 42 15·89	„
	κ Virginis	14 5 19·04	„
	λ ——	14 11 25·14	„
„ 16	κ Virginis	14 5 20·70	A
	λ ——	14 11 26·78	„
	Moon I. L.	14 29 58·64	„
	β Libræ	15 9 23·31	„
„ 17	β Libræ	15 9 25·14	A
	Moon I. L.	15 18 56·29	„
„ 18	δ Scorpii	15 51 58·25	A
	β^1 ——	15 57 13·40	„
	Moon II. L.	16 11 29·71	„
	m Scorpii	16 33 24·16	„
	η Ophiuchi	17 2 16·75	„
„ 19	m Scorpii	16 33 25·73	A
	Moon II. L.	17 3 23·78	„
	D Ophiuchi	17 34 58·08	„

Date.	Names.	Observed Transit.	Observer.
1848.		h. m. s.	
May 20	4 Sagittarii	17 51 10·68	A
	Moon II. L.	17 56 30·81	„
	γ^1 Sagittarii	18 45 39·36	„
	o ——	18 56 14·11	„
June 19	α^2 Capricorni	20 9 13·98	B
	ρ ——	20 19 48·06	„
	Moon II. L.	20 21 39·21	„
„ 20	s Capricorni	21 6 57·78	B
	Moon II. L.	21 16 15·80	„
	ι Aquarii	21 57 51·05	„
Aug. 10	ξ Serpentis	17 28 59·86	A
	D Ophiuchi	17 34 26·23	„
	Moon I. L.	17 46 30·26	„
	A.S.C. 2125	18 20 38·92	„
„ 15	Moon II. L.	22 28 0·37	B
	φ Aquarii	23 6 34·23	„
	ψ^3 ——	23 11 10·52	„
Sept. 7	μ^1 Sagittarii	18 4 55·64	B
	Moon I. L.	18 16 55·46	„
„ 8	π Sagittarii	19 0 59·55	B
	Moon I. L.	19 11 24·48	„
„ 9	e^2 Sagittarii	19 34 6·43	B
	Moon I. L.	20 6 52·17	„
	α^2 Capricorni	20 9 54·36	„
„ 13	p Piscium	23 51 13·99	A
	Moon II. L.	23 55 52·96	„
	s Piscium	23 57 53·71	„
	m Ceti	0 45 34·85	„
	e Piscium	1 0 52·91	„
„ 14	Moon II. L.	0 53 45·49	A
	e Piscium	1 0 53·57	„
Dec. 4	φ Aquarii	23 7 7·75	A
	ψ^3 ——	23 11 43·93	„
	Moon I. L.	23 28 39·35	„
	s Piscium	23 57 14·43	„
„ 6	e Piscium	0 55 48·93	A
	Moon I. L.	1 19 15·63	„
	ξ^1 Ceti	2 5 42·68	„
„ 8	Moon I. L.	3 19 59·84	B
	γ Tauri	4 11 58·79	„
	α ——	4 28 2·30	„
„ 9	Moon I. L.	4 24 34·40	B
	α Tauri	4 28 3·72	„
	ι ——	4 54 52·56	„
1849. Jan. 3	ν Piscium	1 34 42·89	B

Date.	Names.	Observed Transit.	Observer.
1849.		h. m. s.	
Jan. 3	Moon I. L.	1 54 18·51	B
	ξ^2 Ceti	2 21 16·74	„
	B.A.C. 845	2 37 55·67	„
„ 4	ξ^2 Ceti	2 21 16·96	B
	Moon I. L.	2 52 23·56	„
„ 8	ζ Geminor.	6 56 19·18	A
	Moon I. L.	7 7 15·76	„
	δ Geminor.	7 12 16·30	„
	κ ——	7 36 29·70	„
Feb. 1	δ Arietis	3 3 21·71	A
	ξ Tauri	3 19 21·03	„
	Moon I. L.	3 30 40·47	„
	γ Tauri	4 11 34·27	„
	α ——	4 27 37·65	„
„ 2	γ Tauri	4 11 35·11	A
	α ——	4 27 38·62	„
	Moon I. L.	4 31 9·26	„
	ι Tauri	4 54 27·38	„
	ζ ——	5 29 0·46	„
„ 3	ι Tauri	4 54 28·35	A
	ζ ——	5 29 1·49	„
	Moon I. L.	5 33 30·47	„
	μ Geminor.	6 14 3·60	B
„ 5	δ Geminor.	7 11 31·16	B
	κ ——	7 35 44·63	„
	Moon I. L.	7 39 31·66	„
	θ Cancri	8 23 24·20	„
„ 6	θ Cancri	8 23 24·59	B
	δ ——	8 36 31·69	„
	Moon I. L.	8 40 35·23	„
Mar. 2	11 Orionis	4 55 52·63	B
	15 ——	4 59 59·53	„
	Moon I. L.	5 13 12·83	„
	ν Orionis	5 58 53·31	„
„ 3	μ Geminor.	6 13 46·63	B
	Moon I. L.	6 14 50·87	„
	ξ Geminor.	6 35 45·91	„
	ζ ——	6 55 6·34	„
„ 5	12 Cancri	8 0 14·33	A
	Moon I. L.	8 16 7·24	„
	δ Cancri	8 36 4·41	„
	α ——	8 50 12·09	„
„ 6	δ Cancri	8 36 4·97	A
	α ——	8 50 12·63	„
	Moon I. L.	9 14 22·66	„
	π Leonis	9 54 13·23	„
	α ——	10 0 18·93	„

Date.	Names.	Observed Transit. h. m. s.	Obser-ver.
1849. Mar. 7	π Leonis	9 52 13·81	A
	α ——	10 0 19·55	„
	Moon I. L.	10 10 7·93	„
	d Leonis	10 52 45·98	„
	χ ——	10 57 13·69	„
„ 8	d Leonis	10 52 46·76	A
	χ ——	10 57 14·38	„
	Moon I. L.	11 3 37·15	„
	υ Leonis	11 29 13·99	„
	β Virginis	11 42 50·70	„
„ 12	κ Virginis	14 4 58·44	A
	λ ——	14 11 4·30	„
	Moon II. L.	14 25 42·80	„
	δ Libræ	14 53 2·08	„
	β ——	15 9 0·66	„
„ 13	δ Libræ	14 53 3·73	A
	β ——	15 9 2·41	„
	Moon II. L.	15 14 50·16	„
	β¹ Scorpii	15 56 49·25	„
	ν ——	16 3 22·74	„
„ 14	ν Scorpii	16 3 23·98	A
	Moon II. L.	16 4 28·10	„
	B.A.C. 5579.	16 33 0·88	„
	20 Ophiuchi.	16 41 39·23	„
„ 31	Moon I. L.	6 58 33·17	S
	68 Geminor.	7 25 30·97	„
	κ ——	7 35 51·25	„
April 2	δ Cancri	8 36 39·61	A
	α ——	8 50 47·26	„
	Moon I. L.	8 56 31·66	„
	o Leonis	9 33 39·21	„
„ 3	o Leonis	9 33 40·35	A
	Moon I. L.	9 51 59·32	S
	η Leonis	9 59 41·41	„
	45 Leonis	10 20 16·21	„
	ρ ——	10 25 27·01	„
„ 30	ξ Leonis	9 23 52·05	A
	o ——	9 33 9·25	„
	Moon I. L.	9 35 17·83	„
	α Leonis	10 0 23·61	„
	ρ ——	10 24 55·65	„
May 1	α Leonis	10 0 24·64	B
	ρ ——	10 24 56·72	„
	Moon I. L.	10 28 57·30	„
	χ Leonis	10 57 19·10	„
	σ ——	11 13 26·54	„
„ 2	χ Leonis	10 57 19·74	B
	σ ——	11 13 27·38	„
	Moon I. L.	11 20 16·69	„
	β Virginis	11 42 56·48	„

Date.	Names.	Observed Transit. h. m. s.	Obser-ver.
1849. May 3	β Virginis	11 42 57·14	B
	Moon I. L.	12 9 55·77	A
	η Virginis	12 12 18·13	„
	γ ——	12 34 8·13	„
	θ ——	13 2 15·71	„
„ 4	γ Virginis	12 34 8·70	A
	Moon I. L.	12 58 37·32	„
	θ Virginis	13 2 16·30	„
	α ——	13 17 22·95	„
	m ——	13 33 49·86	„
„ 5	α Virginis	13 17 23·81	A
	m ——	13 33 50·66	„
	Moon I. L.	13 46 59·10	„
	ι Virginis	14 8 15·23	„
	μ ——	14 35 15·69	„
„ 7	β Libræ	15 9 4·17	A
	Moon II. L.	15 26 46·11	„
	δ Scorpii	15 51 36·01	„
	β¹ ——	15 56 51·02	„
„ 8	δ Scorpii	15 51 36·76	A
	β¹ ——	15 56 51·72	„
	Moon II. L.	16 16 41·66	„
	ξ Ophiuchi	17 12 9·10	„
„ 9	η Ophiuchi	17 1 55·89	A
	Moon II. L.	17 7 24·88	„
	ξ Ophiuchi	17 12 10·08	„
	o Serpentis	17 33 8·52	„
	μ¹ Sagittarii	18 4 56·61	„
June 5	φ Ophiuchi	16 22 23·45	B
	20 ——	16 41 22·12	„
	Moon I. L.	16 48 9·24	„
	Moon II. L.	16 50 17·46	„
„ 6	ν Serpentis	17 12 14·44	B
	o ——	17 32 50·14	„
	Moon II. L.	17 41 30·07	„
July 3	Moon I. L.	17 22 59·69	A
	4 Sagittarii	77 50 55·16	„
„ 6	e² Sagittarii	19 34 16·22	A
	57 ——	19 43 48·88	„
	Moon II. L.	20 1 10·00	„
„ 10	φ Aquarii	23 6 55·47	A
	ψ³ ——	23 11 31·70	„
	Moon II. L.	23 25 46·97	„
„ 12	δ Piscium	0 41 18·47	A
	e ——	1 1 2·93	„
	Moon II. L.	1 9 11·15	„
Aug. 8	20 Ceti	0 46 21·73	J
	Moon II. L.	0 53 57·75	„

Date.	Names.	Observed Transit. h. m. s.	Obser-ver.
1849. Aug. 13	ζ Tauri	5 29 46·54	A
	Moon II. L.	5 42 22·33	„
„ 31	ε Aquarii	20 40 0·15	B
	μ ——	20 45 0·71	„
	Moon I.L.	21 5 31·27	„
Sept. 2	Moon I. L.	22 49 45·76	A
	Moon II. L.	22 51 54·92	„
	96 Aquarii	23 12 7·72	„
„ 26	g Sagittarii	19 49 30·86	B
	Moon I. L.	19 50 39·87	„
	υ Capricorni	20 31 35·12	„
„ 7	υ Capricorni	20 31 36·14	B
	Moon I. L.	20 42 43·02	„
	γ Capricorni	21 31 52·59	„
„ 29	θ Aquarii	22 9 3·68	S
	Moon I. L.	22 26 49·38	„
Oct. 1	33 Piscium	23 57 50·45	B
	Moon I. L.	0 12 3·18	„
	(a) Moon II. L.	0 14 14·44	„
	20 Ceti	0 45 31·62	„
„ 2	δ Piscium	0 41 6·23	B
	20 Ceti	0 45 32·74	„
	Moon II. L.	1 8 15·19	„
„ 8	Moon II. L.	7 7 2·80	J
	δ Geminor.	7 11 28·05	„
„ 24	α² Capricorni	20 10 26·13	J
	Moon I. L.	20 21 14·41	„
„ 25	29 Capricorni	21 8 10·81	A
	Moon I. L.	21 12 30·75	„
	δ Capricorni	21 39 29·89	„
	ι Aquarii	21 59 4·83	„
„ 26	δ Capricorni	21 39 31·51	A
	ι Aquarii	21 59 6·17	„
	Moon I. L.	22 3 42·28	„
	σ Aquarii	22 23 28·84	„
	λ ——	22 45 33·91	„
„ 27	λ Aquarii	22 45 35·85	A
	(b) Moon I.L.	22 55 7·38	„
„ 29	Moon I. L.	0 40 32·40	B
	20 Ceti	0 45 13·29	„
	(c) μ Piscium	1 23 12·39	„
	o ——	1 38 21·24	„
„ 30	μ Piscium	1 23 14·13	B
	Moon I. L.	1 35 42·57	„
	ξ² Ceti	2 21 5·70	„
„ 31	ξ² Ceti	2 21 7·58	B

(a) Not distinct. (b) Very faint (c) Faint.

Date.	Names.	Observed Transit. h.	m.	s.	Observer.
1849.					
Oct. 31	Moon I. L.	2	33	16·71	B
	Moon II. L.	2	35	34·83	”
	B.A.C. 845	2	37	46·53	”
Nov. 4	γ Geminor.	6	30	4·39	J
	(a)Moon II L.	6	47	12·75	”
	λ Geminor.	7	10	29·79	”
” 5	λ Geminor.	7	10	31·53	J
	68 ——	7	26	5·93	”
	Moon II. L.	7	50	21·59	”
	δ Cancri	8	37	12·19	”
” 8	Moon II. L.	10	43	48·05	A
	σ Leonis	11	14	31·81	”
” 9	σ Leonis	11	14	33·66	A
	Moon II. L.	11	36	24·03	”
” 22	γ Capricorni	21	32	18·80	J
	δ ——	21	39	17·81	”
	Moon I. L.	21	42	28·00	”
” 23	θ Aquarii	22	9	29·93	B
	Moon I. L.	22	32	33·94	”
	φ Aquarii	23	7	8·50	”
	ψ^2 ——	23	11	44·74	”
” 24	φ Aquarii	23	7	10·22	B
	ψ^2 ——	23	11	16·40	”
	Moon I. L.	23	23	55·60	”
	33 Piscium	23	58	16·72	”
” 26	20 Ceti	0	46	1·62	B
	Moon I. L.	1	7	12·07	”
” 28	Moon I. L.	3	1	20·37	A
	δ Arietis	3	3	48·38	”
	ε Tauri	3	40	48·11	”
	λ ——	3	53	7·43	”
” 29	λ Tauri	3	53	9·41	A
	Moon I. L.	4	3	25·47	”
	α Tauri	4	28	5·83	”
	ι ——	4	54	55·07	J
Dec. 2	ζ Geminor.	6	56	5·11	J
	δ ——	7	12	2·14	”
	Moon II. L.	7	24	7·37	”
	θ Cancri	8	23	54·51	”
	δ Cancri	8	37	1·35	”
” 21	λ Aquarii	22	45	15·05	J
	Moon I. L.	23	3	43·03	”
	27 Piscium	23	51	28·06	”
” 27	α Tauri	4	28	1·20	J
	Moon I. L.	4	32	14·22	”
	ι Tauri	4	54	50·27	”

Date.	Names.	Observed Transit. h.	m.	s.	Observer.
1849.					
Dec. 29	μ Geminor.	6	14	39·68	J
	γ ——	6	29	49·41	”
	(b)Moon I.L.	6	45	52·41	”
	Moon II. L.	6	48	21·37	”
1850.					
Jan. 25	Moon I. L.	6	9	31·98	A
	μ Geminor.	6	14	1·78	”
	ζ ——	6	55	21·18	”
” 26	ζ Geminor.	6	55	18·00	A
	Moon I. L.	7	15	17·36	”
	β Geminor.	7	36	13·18	”
	φ ——	7	44	24·03	”
Feb. 4	Moon II. L.	15	46	2·99	B
	α Scorpii	16	20	11·70	”
” 5	α Scorpii	16	20	11·48	B
	Moon II. L.	16	36	35·24	”
	η Ophiuchi	17	1	44·71	”
” 6	η Ophiuchi	17	1	44·28	B
	Moon II. L.	17	27	37·81	”
” 18	Moon I. L.	2	43	33·51	J
	ξ Tauri	3	18	55·54	”
” 19	Moon I. L.	3	40	9·55	J
	α Tauri	4	27	11·76	A
” 21	β Tauri	5	16	40·96	A
	ζ ——	5	28	33·24	”
	Moon I. L.	5	40	18·81	”
	μ Geminor.	6	18	45·61	”
	γ ——	6	28	55·23	”
” 22	μ Geminor.	6	13	46·08	A
	γ ——	6	28	55·65	”
	Moon I. L.	6	44	6·17	”
	δ Geminor.	7	11	2·83	”
” 23	δ Geminor.	7	11	3·05	A
	Moon I. L.	7	48	48·02	B
	δ Cancri	8	36	3·43	”
” 25	ο Leonis	9	33	3·15	B
	Moon I. L.	9	54	59·88	”
	α Leonis	10	0	17·58	”
	ρ ——	10	24	49·51	”
” 26	ρ Leonis	10	24	49·66	B
	(c)Moon I.L.	10	54	33·18	J
	(d)Moon II.L.	10	56	50·32	”
	χ Leonis	10	57	11·38	”
	τ ——	11	20	8·43	”
” 27	β Virginis	11	42	48·42	R
	Moon II. L.	11	53	44·05	”
	γ Virginis	12	33	59·18	”
	δ ——	12	47	58·32	”

Date.	Names.	Observed Transit. h.	m.	s.	Observer.
1850.					
Feb. 28	(e) γ Virginis	12	33	59·24	J
	Moon II. L.	12	48	22·85	”
	α Virginis	13	17	13·44	”
Mar. 3	β Libræ	15	8	52·98	J
	Moon II. L.	15	24	53·60	”
	δ Scorpii	15	51	24·58	”
	β^1 ——	15	56	39·60	”
” 5	η Ophiuchi	17	1	43·55	R
	Moon II. L.	17	7	51·56	”
	ν Serpentis	17	12	20·30	”
” 6	Moon II. L.	17	59	34·84	B
	μ^1 Sagittarii	18	4	44·16	”
” 7	ξ^2 Sagittarii	18	48	42·66	B
	Moon II. L.	18	51	22·06	”
	ο Sagittarii	18	55	37·48	”
” 22	ζ Geminor.	6	55	3·94	A
	δ ——	7	11	1·06	”
	Moon I. L.	7	25	2·08	”
	θ Cancri	8	22	53·97	”
	δ ——	8	36	1·06	”
” 23	θ Cancri	8	22	54·40	S
	Moon I. L.	8	27	23·92	”
	δ Cancri	8	36	1·22	”
	α ——	8	50	8·60	”
	κ ——	8	59	29·56	”
” 25	π Leonis	9	52	7·84	A
	α ——	10	0	13·54	”
	Moon I. L.	10	27	24·94	”
” 26	σ Leonis	11	13	14·42	A
	τ ——	11	20	3·86	”
	Moon I. L.	11	24	21·58	”
” 27	π Virginis	11	53	1·16	A
	η ——	12	12	3·88	”
	Moon I. L.	12	19	27·91	”
Apr. 19	Moon I. L.	8	8	38·23	A
	δ Cancri	8	35	59·65	”
	α ——	8	50	7·22	”
” 20	δ Cancri	8	35	59·67	A
	α ——	8	50	7·34	”
	Moon I. L.	9	9	3·79	”
	ο Leonis	9	32	59·39	”
	α ——	10	0	13·76	”
” 22	d Leonis	10	52	41·25	A
	χ ——	10	57	9·20	”
	Moon I. L.	11	3	35·24	”
” 23	β Virginis	11	42	46·90	S
	Moon I. L.	11	57	55·84	”

(a) Greatly agitated. (b) Uneven. (c) Imperfect. (d) Agitated. (e) N. Star

Date.	Names.	Observed Transit.	Observer.
1850.		h. m. s.	
Apr. 23	δ Virginis	12 47 57·31	S
„ 30	4 Sagittarii	17 50 33·36	S
	μ^1 ——	18 4 43·14	„
	Moon II. L.	18 8 39·38	„
	o Sagittarii	18 55 36·76	„
	π ——	19 0 45·66	„
May 20	ν Virginis	11 38 2·78	B
	Moon I. L.	11 41 26·55	„
	η Virginis	12 12 8·03	„
	γ ——	12 33 57·83	„
„ 21	η Virginis	12 12 9·01	B
	Moon I. L.	12 33 54·17	„
	α Virginis	13 17 13·33	„
„ 22	θ Virginis	13 2 7·76	B
	α ——	13 17 14·43	„
	Moon I. L.	13 25 23·57	„
„ 25	δ Scorpii	15 41 29·00	A
	β^1 ——	15 56 44·07	„
	Moon I. L.	16 0 6·30	„
	φ Ophiuchi	16 22 34·32	„
	20 ——	16 41 33·01	„
June 19	Moon I. L.	14 1 35·74	B
	(a) α^2 Libræ	14 43 4·47	„
„ 22	α Scorpii	16 20 45·11	S
	Moon I. L.	16 35 17·32	„
July 18	Moon I. L.	15 28 12·41	S
	δ Scorpii	15 52 27·10	„
	β^1 ——	15 57 42·12	„
Aug. 21	29 Capricorni	21 7 48·52	S
	Moon I. L.	21 12 35·46	„
	ι Capricorni	21 14 15·44	„
	δ ——	21 39 7·50	„
	μ ——	21 45 28·67	„
Oct. 12	ξ^2 Sagittarii	18 49 35·02	J
	Moon I. L.	18 52 0·90	„
	o Sagittarii	18 56 29·84	„
„ 14	Moon I. L.	20 35 52·28	B
	ν Aquarii	21 2 14·84	„
	ι Capricorni	21 14 43·05	„
„ 15	ν Aquarii	21 2 14·52	B
	ι Capricorni	21 14 42·89	„
	Moon I. L.	21 26 2·24	„
	ι Aquarii	21 59 9·86	„
	θ ——	22 9 44·82	„
„ 17	Moon I. L.	23 3 37·67	S
	φ Aquarii	23 7 23·85	„

Date.	Names.	Observed Transit.	Observer.
1850.		h. m. s.	
Oct. 18	Moon I. L.	23 51 51·68	S
	(a) 30 Piscium	23 55 6·54	„
	δ ——	0 41 45·03	„
	20 Ceti	0 46 11·41	„
„ 28	Moon II. L.	9 18 16·36	V
	α Leonis	10 1 11·18	„
	γ ——	10 12 30·15	„
„ 29	α Leonis	10 1 11·38	V
	(b) Moon II. L.	10 17 13·88	„
Nov. 11	Moon I. L.	21 5 50·49	S
	γ Capricorni	21 32 37·88	„
	δ ——	21 39 36·94	„
„ 13	Moon I. L.	22 43 32·63	S
	λ Aquarii	22 45 39·35	„
	φ ——	23 7 25·33	„
„ 14	φ Aquarii	23 7 25·59	S
	ψ^3 ——	23 12 1·98	„
	(c) Moon I. L.	23 31 19·69	„
	27 Piscium	23 51 52·43	„
	33 ——	23 58 32·11	„
„ 15	27 Piscium	23 51 52·47	S
	33 ——	23 58 32·09	„
	Moon I. L.	0 19 16·11	„
„ 18	ν Ceti	2 28 58·53	B
	B.A.C. 845	2 37 43·52	„
	Moon I. L.	2 51 42·32	„
	o Tauri	3 17 38·01	„
	ξ ——	3 19 55·94	„
„ 19	o Tauri	3 17 38·27	B
	ξ ——	3 19 56·28	„
	Moon I. L.	3 47 46·09	„
	Moon II. L.	3 50 3·41	„
	s Tauri	4 20 45·50	„
	α ——	4 28 12·77	„
Dec. 11	φ Aquarii	23 7 32·02	R
	Moon I. L.	23 11 34·30	„
	27 Piscium	23 51 58·43	„
	33 ——	23 58 38·29	„
„ 12	27 Piscium	23 51 59·08	B
	Moon I. L.	23 58 36·44	„
	δ Piscium	0 41 54·05	„
	20 Ceti	0 46 20·60	„
„ 13	δ Piscium	0 41 54·45	B
	Moon I. L.	0 46 2·71	„
	ν Piscium	1 34 38·31	„
	o ——	1 38 29·38	„
„ 14	Moon I. L.	1 34 46·89	B
	o Piscium	1 38 29·70	„

Date	Names.	Observed Transit	Observer.
1850.		h. m. s.	
Dec. 14	ξ^1 Ceti	2 6 4·42	B
	ξ^2 ——	2 21 12·59	„
„ 16	o Tauri	3 17 47·60	S
	Moon I. L.	3 19 51·23	„
	γ Tauri	4 12 19·01	„
	s ——	4 20 54·89	„
„ 17	γ Tauri	4 12 19·51	S
	Moon I. L.	4 17 39·61	„
	o^1 Orionis	4 45 6·51	„
	ι Tauri	4 55 11·85	„
1851.			
Jan. 10	s Piscium	0 55 21·91	M
	Moon I. L.	1 13 2·92	S
	α Piscium	1 54 30·02	„
	ξ^1 Ceti	2 5 16·53	„
„ 11	Moon I. L.	2 1 34·65	S
	ξ^1 Ceti	2 5 16·73	„
	B.A.C. 845	2 37 4·27	„
	π Arietis	2 41 9·74	„
„ 13	e Tauri	3 40 18·07	S
	Moon I. L.	3 47 2·79	„
	λ Tauri	3 52 37·59	„
	α ——	4 27 34·26	„
„ 14	α Tauri	4 27 34·44	S
	Moon I. L.	4 45 31·41	„
„ 15	o Tauri	5 18 52·87	B
	ζ ——	5 28 56·23	„
	Moon I. L.	5 48 1·86	„
	μ Geminor.	6 14 8·51	„
	ν ——	6 20 18·81	„
„ 16	μ Geminor.	6 14 8·65	B
	ν ——	6 20 18·81	„
	Moon I. L.	6 54 39·65	„
	68 Geminor.	7 25 18·10	„
	κ ——	7 35 38·85	„
„ 24	α^2 Libræ	14 43 53·23	R
	Moon II. L.	14 51 47·77	„
Feb. 10	λ Tauri	3 52 49·72	R
	γ ——	4 11 43·31	„
	Moon I. L.	4 18 19·50	„
	11 Orionis	4 56 27·82	„
„ 11	11 Orionis	4 56 28·28	R
	15 ——	5 1 35·36	„
	Moon I. L.	5 16 53·55	„
	η Geminor.	6 6 18·07	„
	μ ——	6 14 21·97	„
„ 12	η Geminor.	6 6 18·69	B
	μ ——	6 14 22·43	„

(a) Faint. (b) Haze. (c) Flying clouds.

Date.	Names.	Observed Transit.	Observer.
1851.		h. m. s.	
Feb. 12	Moon I. L.	6 19 11·03	B
„ 19	θ Virginis	13 2 46·36	S
	Moon II. L.	13 35 46·07	„
	κ Virginis	14 5 28·69	„
	λ ——	14 11 34·76	„
„ 20	κ Virginis	14 5 29·85	S
	λ ——	14 11 35·77	„
	Moon II. L.	14 30 36·47	„
	β Libræ	15 9 31·79	„
„ 21	β Libræ	15 9 32·91	S
	Moon II. L.	15 24 51·56	„
	ν Scorpii	16 3 53·43	„
„ 24	Moon II. L.	18 7 6·09	S
	π Sagittarii	19 1 29·33	„
Mar. 12	μ Geminor.	6 14 33·35	S
	ν ——	6 20 43·67	„
	Moon I. L.	6 54 51·65	„
	68 Geminor.	7 25 43·41	„
	κ ——	7 36 3·96	„
„ 13	68 Geminor.	7 25 42·85	S
	κ ——	7 36 3·88	„
	Moon I. L.	7 58 21·02	„
„ 23	θ Ophiuchi	17 13 25·24	R
	58 ——	17 35 3·66	„
	Moon II. L.	17 46 55·88	„
	λ Sagittarii	18 19 19·66	„
„ 24	λ Sagittarii	18 19 20·00	R
	Moon II. L.	18 41 42·65	„
April 7	Moon I. L.	5 34 14·31	M
	ε Geminor.	6 35 24·19	„
„ 8	Moon I. L.	6 34 0·90	M
	ζ Geminor.	6 55 55·85	„
	δ ——	7 11 53·10	„
„ 9	ζ Geminor.	6 55 56·79	M
	δ ——	7 11 54·02	„
	Moon I. L.	7 35 22·71	B
	θ Cancri	8 23 46·48	„
	δ ——	8 36 53·68	„
„ 10	θ Cancri	8 23 47·44	B
	Moon I. L.	8 37 14·26	„
	κ Cancri	9 0 22·56	„
	ξ Leonis	9 24 36·94	„
„ 11	κ Cancri	9 0 23·60	B
	ξ Leonis	9 24 37·92	„
	Moon I. L.	9 38 32·85	„
	α Leonis	10 1 9·34	„
	ρ ——	10 25 41·41	„

Date.	Names.	Observed Transit.	Observer.
1851.		h. m. s.	
Apr. 21	o Sagittarii	18 56 33·69	S
	Moon II. L.	19 14 17·67	„
	e² Sagittarii	19 34 48·00	„
„ 22	e² Sagittarii	19 34 48·50	S
	Moon II. L.	20 8 0·42	„
May 8	Moon I. L.	9 19 11·72	M
	π Leonis	9 52 6·54	„
	α ——	10 1 12·35	„
„ 15	η Libræ	15 36 30·55	S
	θ ——	15 46 9·43	„
	(a) Moon I. L.	15 55 22·69	„
	Moon II. L.	15 57 40·15	„
	B.A.C. 5579.	16 33 46·50	„
„ 16	B.A.C. 5579.	16 33 46·48	S
	Moon II. L.	16 55 11·77	„
	c² Ophiuchi	17 23 8·48	„
	58 ——	17 35 18·96	„
„ 18	Moon II. L.	18 49 51·36	S
	o Sagittarii	18 56 33·80	„
„ 19	h² Sagittarii	19 28 26·37	B
	e² ——	19 35 47·82	„
	Moon II. L.	19 45 20·79	„
	ψ Capricorni	20 38 3·71	„
„ 20	Moon II. L.	20 38 44·43	B
	ζ Capricorni	21 18 56·87	„
	ε ——	21 29 31·37	„
June 12	ψ Ophiuchi	16 16 11·75	S
	Moon I. L.	16 28 35·04	„
„ 15	Moon II. L.	19 20 53·11	B
	β Capricorni	20 12 34·02	„
	ρ ——	20 20 17·06	„
July 8	(b) α² Libræ	14 41 21·62	S
	(b) Moon I. L.	15 12 16·18	„
„ 9	(b) θ Libræ	15 44 4·68	S
	Moon I. L.	16 7 10·36	„
„ 10	Moon I. L.	17 3 1·97	R
	ξ Ophiuchi	17 10 47·63	„
Aug. 8	Moon I. L.	18 38 4·65	S
	π Sagittarii	19 0 19·61	„
	ρ¹ ——	19 12 27·43	„
„ 11	29 Capricorni	21 6 57·00	S
	ι ——	21 13 23·95	„
	Moon I. L.	21 18 39·59	„
	Moon II. L.	21 20 48·45	„
	ι Aquarii	21 57 50·40	„

Date.	Names.	Observed Transit.	Observer.
1851.		h. m. s.	
Sept. 3	θ Ophiuchi	17 12 35·60	S
	Moon I. L.	17 25 3·73	„
	μ¹ Sagittarii	18 4 35·24	„
„ 5	o Sagittarii	18 55 30·04	R
	π ——	19 0 39·04	„
	Moon I. L.	19 17 30·46	„
	α² Capricorni	20 9 32·08	„
	β ——	20 12 23·34	„
„ 6	Moon I. L.	20 10 26·09	R
	β Capricorni	20 12 24·06	„
	υ ——	20 31 19·61	„
	ψ ——	20 37 1·97	„
„ 18	Moon II. L.	6 6 34·76	S
	μ Geminor.	6 13 49·34	„
„ 19	Moon II. L.	7 7 9·72	S
	δ Geminor.	7 11 6·34	„
„ 30	η Ophiuchi	17 1 48·94	J
	Moon I. L.	17 3 45·29	„
	μ¹ Sagittarii	18 4 50·40	„
Oct. 1	(b) Moon I. L.	18 1 30·94	B
	o Sagittarii	18 55 45·66	R
	π ——	19 0 54·68	„
„ 2	o Sagittarii	18 55 46·32	R
	Moon I. L.	18 58 13·64	„
	π Sagittarii	19 0 55·24	„
„ 3	h² Sagittarii	19 27 40·21	J
	e² ——	19 34 1·60	„
	Moon I. L.	19 53 16·30	„
	β Capricorni	20 12 40·50	„
	ψ ——	20 37 18·77	B
„ 4	ψ Capricorni	20 37 19·87	M
	Moon I. L.	20 46 18·85	„
„ 31	β Capricorni	20 12 59·53	B
	(b) Moon I. L.	20 27 11·79	„
	υ Capricorni	20 31 55·29	„
Nov. 28	Moon I. L.	20 58 17·07	S
	(b) μ Capricorni	21 45 55·69	„
Dec. 1	φ Aquarii	23 7 22·55	R
	ψ³ ——	23 11 58·72	„
	Moon I. L.	23 25 30·51	„
	27 Piscium	23 51 49·32	„
	33 ——	23 58 29·06	„
„ 2	27 Piscium	23 51 50·28	R
	33 ——	23 58 30·00	„
	Moon I. L.	0 11 7·74	S
	B.A.C. 205	0 38 37·60	„
	20 Ceti	0 46 12·15	„

(a) Imperfect. (b) Faint.

Date.	Names.	Observed Transit.	Observer.
1851.		h. m. s.	
Dec. 3	B.A.C. 205	0 38 38·36	S
	20 Ceti	0 46 13·01	”
	Moon I. L.	0 56 24·61	”
	μ Piscium	1 23 12·21	”
	o ——	1 38 21·14	”
” 4	Moon I. L.	1 42 15·23	S
	ξ^2 Ceti	2 21 5·02	”
	ν ——	2 28 54·28	”
” 6	o Tauri	3 17 39·67	S
	Moon I. L.	3 19 9·94	”
	f Tauri	3 23 31·00	”
” 30	12 Ceti	0 23 21·56	J
	13 ——	0 28 30·36	”
	Moon I. L.	0 37 41·45	”
	e Piscium	1 1 27·48	”
1852.			
Jan. 2	π Arietis	2 41 54·48	J
	Moon I. L.	2 55 51·09	”
	ε Tauri	3 40 1·86	”
	1 ——	3 52 21·49	”
” 6	Moon I. L.	6 39 12·23	S
	δ Geminor.	7 11 11·95	”
	κ ——	7 35 25·91	”
” 8	θ Cancri	8 23 4·80	S
	δ ——	8 36 11·38	”
	Moon II. L.	8 48 49·47	”
” 15	Moon II. L.	15 27 27·44	B
	β^1 Scorpii	15 56 46·40	”
	ν ——	16 3 20·24	”
” 16	β^1 Scorpii	15 56 46·94	B
	Moon II. L.	16 19 5·15	”
” 28	o Piscium	1 37 38·78	S
	Moon I. L.	1 48 31·31	”
	ξ^2 Ceti	2 20 21·58	”
	B.A.C. 845	2 37 0·74	”
” 30	Moon I. L.	3 23 27·97	M
	γ Tauri	4 11 28·90	”
	δ^2 ——	4 14 30·50	”
” 31	γ Tauri	4 11 30·65	M
	Moon I. L.	4 15 0·06	”
	o^1 Orionis	4 44 18·32	”
Feb. 2	ν Orionis	5 59 21·81	S
	Moon I. L.	6 8 50·17	”
	51 Geminor.	7 5 7·30	”
	δ ——	7 11 31·67	”
” 3	51 Geminor.	7 5 9·38	S
	Moon I. L.	7 10 32·17	”

Date.	Names.	Observed Transit.	Observer.
1852.		h. m. s.	
Feb. 3	β Geminor.	7 36 32·29	S
	φ ——	7 44 43·39	”
” 4	β Geminor.	7 36 34·65	S
	Moon I. L.	8 13 51·53	”
” 13	Moon II. L.	17 0 5·30	S
	η Ophiuchi	17 2 36·50	”
	μ^1 Sagittarii	18 5 37·18	”
” 27	Moon I. L.	3 53 14·90	R
	(a) s Tauri	4 20 12·59	”
	α ——	4 27 39·86	”
Mar. 2	51 Geminor.	7 5 15·45	B
	δ ——	7 11 40·10	”
	Moon I. L.	7 41 20·29	”
	δ Cancri	8 36 39·81	”
	α ——	8 50 47·08	”
” 3	δ Cancri	8 36 41·89	B
	Moon I. L.	8 43 53·73	”
	α Cancri	8 50 49·10	”
	ξ Leonis	9 24 23·90	”
	o ——	9 33 40·95	”
” 4	ξ Leonis	9 24 25·48	B
	o ——	9 33 42·45	”
	Moon I. L.	9 46 19·61	”
” 28	μ Geminor.	6 14 40·44	J
	Moon I. L.	6 16 22·96	”
	ν Geminor.	6 20 50·54	”
” 30	3 Cancri	7 52 0·55	M
	Moon I. L.	8 15 9·98	”
” 31	δ Cancri	8 36 59·37	B
	o^2 ——	8 50 2·33	”
	Moon I. L.	9 15 51·37	”
	α Leonis	10 1 13·06	”
	γ ——	10 12 32·10	”
Apr. 1	α Leonis	10 1 13·42	B
	γ ——	10 12 32·58	”
	Moon I. L.	10 16 12·48	”
	χ Leonis	10 58 7·36	”
	ι ——	11 16 56·96	”
” 2	χ Leonis	10 58 8·02	B
	Moon I. L.	11 15 47·34	”
	β Virginis	11 43 44·58	”
” 26	Moon I. L.	7 53 51·04	R
	δ Cancri	8 37 12·48	”
	α ——	8 51 19·97	”
” 27	δ Cancri	8 37 13·18	R
	Moon I. L.	8 52 43·82	”
	ν Leonis	9 50 12·95	”

Date.	Names.	Observed Transit.	Observer.
1852.		h. m. s.	
Apr. 28	Moon I. L.	9 51 15·70	R
	η Leonis	10 0 13·70	”
	γ ——	10 12 46·70	”
” 29	Moon I. L.	10 49 5·51	S
	ι Leonis	11 17 12·87	”
	ξ Virginis	11 38 39·75	”
” 30	ι Leonis	11 17 13·73	S
	ξ Virginis	11 38 40·41	”
	Moon I. L.	11 46 18·46	”
	η Virginis	12 13 21·54	”
	γ ——	12 35 11·10	”
May 25	Moon I. L.	9 32 58·07	M
	α Leonis	10 1 45·40	”
	ρ ——	10 26 17·25	”
” 26	α Leonis	10 1 45·12	M
	ρ ——	10 26 17·18	”
	Moon I. L.	10 29 35·23	”
	d Leonis	10 54 11·57	”
	χ ——	10 58 39·35	”
” 27	d Leonis	10 54 11·39	M
	χ ——	10 58 39·19	”
	Moon I. L.	11 25 13·63	”
” 29	δ Virginis	12 49 25·55	B
	θ ——	13 3 34·33	”
	Moon I. L.	13 15 43·97	”
	κ Virginis	14 6 17·63	”
” 31	δ Libræ	14 54 21·27	B
	β ——	15 10 19·76	”
	Moon I. L.	15 10 54·91	”
June 28	(a) η Libræ	15 36 40·69	S
	(a) Moon I. L.	15 45 14·77	”
	B.A.C. 5579	16 33 56·59	”
Aug. 24	4 Sagittarii	17 51 48·22	S
	Moon I. L.	18 6 22·08	”
	o Sagittarii	18 56 51·66	”
	π ——	19 2 0·72	”
” 25	o Sagittarii	18 56 50·56	S
	π ——	19 1 59·74	”
	Moon I. L.	19 6 45·42	”
	h^2 Sagittarii	19 28 44·12	”
	e^2 ——	19 35 5·41	”
” 26	e^3 Sagittarii	19 35 3·65	S
	Moon I. L.	20 5 45·03	”
	η Capricorni	20 56 59·16	”
	29 ——	21 8 33·85	”
” 27	η Capricorni	20 56 57·50	S

(a) Faint.

ames.	Observed Transit.	Obser-ver.	Date.	Names.	Observed Transit.	Obser-ver.	Date.	Names.	Observed Transit	Obser-ver
	h. m. s.		1852.		*h. m. s.*		1852.		*h. m. s.*	
n I. L.	21 2 19·58	S	Oct. 23	Moon I. L.	23 3 33·56	S	Nov. 23	ν Piscium	1 33 51·04	B
apricorni	21 8 32·01	,,		φ Aquarii	23 7 35·26	,,		Moon I. L.	1 49 15·87	,,
				20 Piscium	23 41 16·25	,,				
pricorni	21 46 10·52	S		27 ——	23 52 1·23	,,	,, 24	ξ^2 Ceti	2 20 23·64	B
n I. L.	21 55 54·57	,,						Moon II. L.	2 34 44·86	,,
uarii	21 59 23·32	,,	,, 25	12 Ceti	0 23 28·59	S		δ Arietis	3 3 16·35	,,
				13 ——	0 28 37·25	,,				
gittarii	18 45 42·25	S		Moon I. L.	0 35 27·12	,,	Dec. 20	Moon I. L.	1 32 34·32	S
n I. L.	18 48 12·01	,,						ξ^1 Ceti	2 4 48·79	,,
			,, 26	ε Piscium	0 56 17·70	S				
gittarii	19 34 31·11	B		*e* ——	1 1 46·90	,,	,, 21	ξ^1 Ceti	2 4 47·15	S
n I. L.	19 47 39·77	,,		Moon I. L.	1 20 11·88	,,		Moon I. L.	2 17 36·14	,,
								λ Ceti	2 51 25·25	,,
n I. L.	21 38 38·16	B	Nov. 19	Moon I. L.	22 47 42·90	M				
uarii.	21 58 55·97	,,		φ Aquarii	23 7 35·98	,,	,, 23	Moon I. L.	3 52 27·19	S
—	22 23 18·01	,,						A^1 Tauri	3 55 34·73	,,
			,, 20	φ Aquarii	23 7 34·86	M		ε ——	4 19 36·41	,,
uarii	21 58 56·35	B		Moon I. L.	23 35 13·36	B		α ——	4 27 3·53	,,
n I. L.	22 29 30·53	,,								
			,, 22	20 Ceti	0 46 21·06	B	,, 24	ε Tauri	4 19 36·61	S
pricorni	21 39 45·81	S		*e* Piscium	1 1 39·31	,,		α ——	4 27 3·58	,,
n I. L.	22 14 41·71	,,		Moon I. L.	1 4 24·47	,,		Moon I. L.	4 43 31·85	,,

FINIS.

APPENDIX

CONTAINING

OBSERVATIONS

MADE AT THE MADRAS OBSERVATORY,

WITH THE

LEREBOURS EQUATORIAL,

SUBSEQUENT TO THE ARRIVAL OF THE NEW OBJECT GLASS IN 1852

ALSO

A DISCUSSION OF THE PARALLAX

OF α HERCULIS.

 105 DOUBLE STARS OBSERVED WITH THE LEREBOURS EQUATORIAL.

Reference Number.	Synonym.	A. R.	N P. D.	Position Angle.	Weight.	No of Observations	Magnifying Power.	Distance.	Weight	No of Observations.	Magnifying Power.	Magnitudes.	Date.	Remarks.
		h. m.	° ′	°				″						
546	α Piscium	1 54	87 57	327·78	5′	5	365	3·20	4′	8	365	5′—5′	1853·959	
547	(Continued.)	—	—	328·44	5′	5	—	3·19	3′	6	—	—	— ·973	
548	γ Androm. BC	55	48 24	112·92	1′	3	365	*0·5	—	—	—	6′—7	1852·644	A wedge.
549	—	—	—	108·90	1	3	320	—	—	—	—	—	— ·995	
550	—	—	—	102·95	3	5	365	0·4	—	—	—	—	1853·921	Blurred.
551	—	—	—	107·15	3′	5	—	—	—	—	—	—	— ·937	
552	—	—	—	110·72	2	3	—	—	—	—	—	—	— ·940	
553	—	—	—	107·60	4	4	—	—	—	—	—	—	— ·959	
554	— AB	—	—	62·10	2	2	365	10·87	2	4	365	3—6′	— ·915	
555	—	—	—	61·04	3	3	—	10·05	3	6	—	—	— ·921	
556	h 3485	2 6	140 2	139·35	3	5	277	4·49	1	4	277	10—10′	1852·820	
557	—	—	—	138·50	2′	4	—	4·34	1	4	—	10′—11	1853·066	
558	—	—	—	139·72	4′	5	—	4·63	1′	4	—	—	— ·072	
559	h 3494	13·5	126 8	110·35	3′	5	277	*1·6	—	—	—	9—9	1852·820	
560	—	—	—	109·69	3	4	—	1·96	1′	4	277	—	— ·825	
561	γ Ceti	36	87 26	290·12	4′	5	293	2·77	3	6	293	3′—7	1853·058	A orange, B blue.
562	—	—	—	291·82	4′	5	277	2·63	2′	6	277	—	—	
563	ε Arietis	50	69 16	197·04	4	3	277	*0·8	—	—	—	5′—6	1852·971	
564	—	—	—	193·92	3	4	365	1·08	1	4	365	—	1853·033	
565	—	—	—	194·68	4′	5	—	1·06	1	4	—	—	— ·036	
566	—	—	—	198·83	4	5	—	1·07	2′	6	—	—	— ·959	
567	—	—	—	196·58	4′	5	—	1·10	2	6	—	—	— ·973	
568	θ Eridani	52	130 49	83·33	7	5	277	8·03	5	8	277	3′—4	1852·755	
569	—	—	—	83·96	6	5	—	8·09	3′	6	—	—	— ·758	
570	—	—	—	82·72	5′	5	—	7·92	3	6	—	3′—4′	— ·814	
571	—	—	—	82·92	5′	5	—	8·05	2′	6	—	—	— ·820	
572	—	—	—	82·98	5	5	—	7·72	3′	6	—	—	1853·151	Daylight.
573	—	—	—	82·79	5′	5	—	7·94	3′	6	—	—	— ·165	Twilight.
574	B.A.C 936	52	58 11	187·84	4′	5	174	8·48	2′	6	174	7—8′	1853·121	
575	—	—	—	187·72	5′	5	277	8·59	3′	6	277	—	— ·123	
576	12 Eridani	3 6	119 34	308·40	4′	5	282	—	—	—	—	4—7	1852·968	
577	—	—	—	309·78	5	5	277	3·17	3	6	277	—	— ·970	
578	—	—	—	310·60	5	5	320	3·41	3′	6	320	—	— ·995	
579	—	—	—	310·33	5′	5	277	3·27	3′	6	277	—	— ·998	
580	h 3565	12	109 4	109·40	6	5	277	5·60	4	6	277	6—9	1853·072	
581	—	—	—	111·66	5	6	—	5·51	3′	6	—	—	— ·088	
582	S 431	29	89 54	237·42	5′	5	365	6·36	3′	6	365	7—9	1853·973	
583	—	—	—	238·88	6′	6	277	6·30	4	6	277	—	— ·992	
584	f Eridani	43	128 5	203·23	6	5	277	6·97	4	6	277	5′—6	1852·758	
585	—	—	—	201·51	4′	5	—	—	—	—	—	5—5′	1853·063	
586	—	—	—	201·91	5	5	—	7·15	3′	6	277	—	— ·066	
587	—	—	—	203·20	6	5	—	7·14	3′	6	—	5′—5′	— ·178	
588	—	—	—	202·88	5′	5	—	7·19	3	6	—	—	— ·181	
589	—	—	—	202·60	7′	6	—	6·91	3	6	—	—	— ·184	
590	39 Eridani	4 7	100 38	151·25	8	6	277	6·52	3	6	277	5′—9	1853·072	A orange, B blue.
591	—	—	—	152·56	5′	5	—	6·56	3	6	—	—	— ·088	
592	—	—	—	149·55	4′	5	—	6·42	3	6	—	—	— ·091	

549 Taken with Troughton's Micrometer and Barlow lens.
561 Taken with Lerebours' Micrometer. B has rather a greenish tinge.
563 Barely divided.
564, 565 } Well divided.
576 Taken with Troughton's Micrometer.
578 Do. and Barlow lens.
585 Frequently obscured by clouds, which prevented the distance being taken.
589 Exactly at sunset.

* Estimated.

Reference Number.	Synonym.	A. R.	N. P. D.	Position Angle.	Weight.	No. of Observations.	Magnifying Power.	Distance.	Weight.	No. of Observations.	Magnifying Power.	Magnitudes.	Date.	Remarks.
		h. m.	° '	°				"						
593	h 3632	4 9	120 28	164·47	4'	4	365	10·99	3	6	365	8 —11	1853·978	
594	—	—	—	164·78	4'	5	277	10·83	3	6	277	—	— ·992	
595	AB	18	99 5	266·46	2'	2	277	126·32	1	1	277	8'—9	1853·088	
596		—	—	266·60	2'	2	—	127·58	1	1	—	—	— ·091	
597		—	—	266·80	2	2	—	—	—	—	—	—	— ·093	
598	Σ 544 BC	—	—	353·33	3	5	277	2·26	3	6	277	9 —10	— ·088	
599	—	—	—	351·73	3	5	—	—	—	—	—	—	— ·091	
600	—	—	—	355·65	2'	4	—	2·39	3'	6	—	—	— ·093	
601	80 Tauri	22	74 44	11·28	3	5	277	1·62	2'	6	277	6 —9	1853·134	
602	—	—	—	9·39	3'	5	365	1·38	2'	6	365	6 —9'	— ·143	
603	Σ 566	28	36 50	303·51	3'	5	365	2·05	3	6	365	6'—8'	1853·192	
604	—	—	—	303·93	3	5	—	1·81	2'	6	—	—	— ·197	
605	—	59	125 41	316·02	3	5	277	2·68	2	6	277	6 —9'	1852·755	
606	B.A.C. 1573	—	—	316·35	4'	5	—	2·87	3'	6	—	5'—9'	— ·758	
607	—	—	—	316·53	3'	5	365	2·70	2'	6	365	6 —10	1853·978	
608	—	—	—	314·80	3'	5	277	2·99	2'	6	277	5 —10	1854·006	
609	—	—	—	314·86	4	5	—	2·89	2'	6	—	5'—10'	— ·017	
610	h 3728	5 4	131 25	260·65	4	5	277	9·83	2'	6	277	7 —11	1853·072	
611	—	—	—	260·36	2'	4	—	9·68	2	6	—	7 —12	— ·094	
612	κ Leporis AB	6	103 7	359·80	4'	5	277	2·56	4	6	277	4'—8'	1853·090	A yellow, B blue.
613	—	—	—	359·33	4'	5	—	2·57	4	6	—	—	— ·128	
614	AC	—	—	58·85	1	1	—	*210·	—	—	—	4'—8	— ·090	
615	h 3752 AB	16	114 55	108·42	5	5	293	2·90	3'	6	293	6'—7'	1853·058	
616	—	—	—	106·58	5'	5	277	2·83	3'	6	277	5'—6'	— ·090	
617	AC	—	—	105·97	6	4	293	58·33	2'	6	293	6'—9'	— ·058	
618	—	—	—	105·75	5	3	277	59·21	1'	4	277	5'—9'	— ·090	
619	η Orionis	17	92 32	87·16	3	4	365	1·22	2	6	365	4 —6'	1853·121	A pale yellow. B ochre yellow.
620	—	—	—	87·03	4	5	—	1·01	3	8	—	—	— ·123	
621	—	—	—	86·93	3	5	—	1·03	2'	6	—	—	— ·126	
622	—	—	—	84·38	3	5	—	*0·7	—	—	—	3'—5	— ·978	
623	—	—	—	83·22	3'	5	—	*0·8	—	—	—	—	1854·006	Notched.
624	32 Orionis	23	84 10	201·67	3	5	365	*0·9	—	—	—	5 —7'	1853·083	A white, B bluish.
625	—	—	—	202·32	2'	4	—	1·11	2	6	365	—	— ·036	
626	33 Orionis	23	86 50	26·50	4	5	277	1·90	2'	6	277	6 —8	1852·856	
627	—	—	—	25·17	4	5	365	1·84	3	6	365	—	1853·083	
628	B.A.C. 1728	24	73 3	141·95	4'	5	277	9·43	3'	6	277	6'—6'	1853·036	
629	—	—	—	140·88	6'	5	—	9·52	4	6	—	—	— ·123	
630	θ Orionis AB	28	95 30	310·66	2	2	277	12·85	2	4	277	4'—7	1853·014	
631	—	—	—	311·57	3	2	—	12·98	2	4	—	5 —7	— ·080	
632	AC	—	—	60·98	2	2	—	13·38	2	4	—	4'—7	— ·014	
633	—	—	—	60·81	3	3	—	13·80	2	4	—	5 —7	— ·030	
634	AD	—	—	343·85	1'	2	—	16·63	1'	4	—	4'—8	— ·014	
635	—	—	—	342·90	1'	2	—	16·96	1'	4	—	5 —7'	— ·030	
636	Aa	—	—	124·25	2'	3	—	3·26	1	4	277	4'—14	— ·014	
637	—	—	—	122·33	2	3	—	—	—	—	—	5 —15	— ·030	
638	BE	—	—	351·81	3	4	—	3·98	2	4	—	7 —11	— ·014	
639	—	—	—	352·41	2	3	—	3·99	1	4	—	7 —12	— ·030	

615, 617 } Taken with Lerebours' Micrometer.
619 Discs in contact.
624 Discs in contact.
625 Just divided.

B b

* Estimated.

Reference Number.	Synonym.	A. R.	N. P. D.	Position Angle.	Weight.	No. of Observations.	Magnifying Power.	Distance.	Weight.	No. of Observations.	Magnifying Power.	Magnitudes.	Date.	Remarks.
		h. m.	° ′	°				″						
640	42 Orionis	5 28	94 54	216·08	1′	3	365	*1·6	—	—	—	5—11	1853·124	
641	—	—	—	219·25	3	4	—	1·65	1′	4	365	5—10	— ·145	
642	—	—	—	221·14	2	4	—	—	—	—	—	5—10′	— ·173	
643	26 Aurigæ	29	59 56	267·60	4′	5	365	12·57	1′	4	365	5—10	1853·192	
644	—	—	—	267·28	5	5	—	12·32	2	6	—	—	— ·197	
645	ζ Orionis AB	33	92 2	150·03	4	5	277	2·44	2′	6	277	2—5′	1853·181	
646	—	—	—	149·85	4′	5	—	2·13	3′	6	—	—	— ·184	Daylight.
647	—	—	—	149·85	6	6	365	2·25	5′	8	365	—	— ·186	
648	—	—	—	150·03	5′	6	—	2·42	3′	6	—	—	— ·189	
649	—	—	—	149·41	4	5	—	2·30	2′	6	—	—	— ·766	Daylight.
650	—	—	—	151·81	5′	5	—	2·25	3′	6	—	—	— ·769	
651	—	—	—	153·86	5	5	—	2·48	3	6	—	—	— ·772	
652	—	—	—	150·72	5	5	—	2·27	4	6	—	—	— ·774	
653	—	—	—	148·63	6′	7	277	2·25	3′	6	277	—	1854·063	
654	—	—	—	149·23	5	6	—	2·40	3	6	—	—	— ·066	Twilight.
655	AC	—	—	9·30	3	3	—	59·02	1	1	—	2—11	1853·181	
656	—	—	—	9·21	2	2	—	—	—	—	—	—	1854·066	
657	h 3830	59	118 40	182·34	4	5	365	6·55	3′	6	365	9′—9′	1854·042	Both orange.
658	—	—	—	181·71	4	5	277	6·33	3	6	277	—	— ·063	
659	h 3831	59	131 9	135·71	3	5	365	2·71	2	6	365	10—10	1854·042	
660	—	—	—	136·62	3	5	277	2·68	2	6	277	—	— ·063	
661	h 3834 Aa	6 0	135 5	286·99	4	5	365	2·58	2′	6	365	6—11	1854·042	
662	—	—	—	237·83	2′	4	277	—	—	—	—	—	— ·063	
663	AB	—	—	320·30	2	1	365	173·76	1	1	365	6—6′	— ·042	
664	—	—	—	320·10	2′	2	277	—	—	—	—	—	— ·063	
665	⊿ 23	1	138 28	350·32	4′	5	277	2·91	3′	6	277	7—7	1852·727	
666	—	—	—	350·55	4	5	—	2·56	2	6	—	—	— ·733	
667	—	—	—	351·18	4′	5	—	2·86	2′	6	—	7′—7′	— ·741	
668	—	—	—	352·16	4	5	365	2·72	3	6	365	—	1853·979	
669	—	—	—	350·85	4′	5	277	2·40	2′	6	277	—	1854·006	
670	B.A.C. 2048	14	149 7	225·28	3	3	277	†40·55	2′	4	277	7—8′	1853·148	
671	B.A.C. 2080	19	69 7	205·44	6	5	174	31·62	3	6	174	6—7′	1853·126	
672	—	—	—	205·25	7	5	—	31·31	4	6	—	—	— ·143	
673	Cyc. 248 AB	19	89 28	151·35	1	1	365	67·13	1	1	365	6′—10	1853·145	
674	—	—	—	151·21	2	2	277	—	—	—	—	6′—9	— ·148	
675	—	—	—	151·32	2	2	365	66·32	1	1	365	7′—8′	— ·200	
676	Σ 910 BC	—	—	165·20	2′	4	365	*0·6	—	—	—	10—10	— ·145	
677	—	—	—	162·68	3′	5	277	*0·8	—	—	—	9—9·3	— ·148	
678	—	—	—	170·57	2′	4	365	*0·6	—	—	—	8′—8′	— ·200	
679	38 Gemin.	46	76 38	170·13	4′	5	277	6·01	3	6	277	5′—8	1852·775	
680	—	—	—	169·03	5	5	365	5·96	4	6	365	—	— ·783	
681	μ Can. Maj.	49	103 51	337·27	5	5	293	2·87	3′	6	293	5′—9	1853·058	
682	—	—	—	338·00	5′	6	277	2·91	3′	6	277	—	— ·072	
683	δ Gemin.	7 11	67 45	203·16	5′	5	277	7·10	3′	6	277	3′—9	1852·782	
684	—	—	—	201·20	5	5	365	7·02	3′	6	365	—	— ·785	

640 B seen only by glimpses, doubtful.
641 Still only glimpses of B, but rather more certain.
642 Very difficult.
657 Nearly equal.
675 The components would appear to be variable.
678 Just divided.
681 Taken with Lerebours' Micrometer.

* Estimated. † Diff. Declination.

Reference Number.	Synonym.	A. R.	N. P. D.	Position Angle.	Weight.	No. of Observations.	Magnifying Power.	Distance.	Weight.	No. of Observations.	Magnifying Power.	Magnitudes.	Date.	Remarks.
		h. m.	° ′	°				″						
685	π Argus	7 12	126 50	212·35	6	5	174	68·71	2	4	174	5—9	1852·853	
686	—	—	—	212·03	7′	5	—	68·70	2′	4	—	—	1853·173	
687	Castor AB	25	57 47	247·63	6	5	277	5·28	2′	6	277	2—2′	1852·750	Daylight.
688	—	—	—	247·26	7	5	—	4·91	3	6	—	—	1853·170	Daylight.
689	—	—	—	247·10	7	5	365	5·09	4	6	365	—	— ·173	Daylight.
690	—	—	—	247·21	6′	5	277	5·41	3	6	277	—	1854·017	
691	—	—	—	247·45	4′	5	—	5·09	3′	6	—	—	— ·067	
692	AC	—	—	163·38	3′	3	277	72·92	1′	2	277	2—11	— ·067	
693	S 552	28	113 9	287·63	4	5	365	8·63	3	6	365	6′—6′	1853·217	
694	—	—	—	288·20	6	5	—	8·71	4	6	—	—	— ·219	
695	Cyc. 299	32	84 26	138·63	5	6	365	1·50	3′	6	365	7—7	1853·217	
696	—	—	—	137·90	3′	5	—	1·45	3′	6	—	6′—6′	— ·219	
697	Cyc. 301	33	116 28	319·00	6	5	365	9·77	3′	6	365	5′—5′	1853·217	Both yellow.
698	—	—	—	319·15	7	5	—	9·66	4	6	—	—	— ·219	
699	ζ Cancri AB	8 4	71 54	323·80	4	5	365	1·30	2′	6	365	6—7	1853·192	
700	—	—	—	320·27	4	5	—	1·26	3	6	—	—	— ·197	
701	—	—	—	322·05	4	5	—	1·09	2′	6	—	—	— ·200	
702	—	—	—	317·55	4	5	277	1·31	2′	6	277	—	— ·917	
703	—	—	—	316·92	4	5	365	0·96	2	6	365	—	— ·978	
704	AC	—	—	143·01	5	5	365	4·95	2	4	365	6—7	— ·192	
705	—	—	—	141·15	4′	5	—	4·91	2	4	—	—	— ·197	
706	—	—	—	142·02	5′	5	—	4·82	2	4	—	—	— ·200	
707	—	—	—	141·18	3	3	277	4·75	2′	6	277	—	— ·917	
708	—	—	—	139·34	5′	5	365	5·10	3	6	365	—	— ·978	
709	h 4128	36	149 47	220·63	4′	5	277	2·21	2′	6	277	7′—8	1853·947	
710	—	—	—	221·81	3′	5	—	1·91	2′	6	—	8—9	1854·020	
711	—	—	—	220·31	3	4	—	—	—	—	—	—	— ·042	
712	ε Hydræ	39	83 3	209·97	4′	4	277	3·27	4′	6	277	4′—7	1853·225	A yellow, B greenish.
713	—	—	—	208·17	4	5	—	3·39	4	6	—	—	— ·258	
714	—	—	—	209·16	4	5	365	3·29	2′	6	365	—	— ·969	
715	—	—	—	210·05	4′	5	277	3·25	4′	8	277	—	1854·017	
716	B.A.C. 3118	9 0	27 42	25·61	6	5	174	24·77	3′	6	174	7′—7′	1853·126	
717	—	—	—	25·15	4	5	—	24·90	2′	6	—	—	— ·143	
718	ω Leonis	20	80 18	346·67	2	5	365	*0·5	—	—	—	6′—7	1853·170	
719	—	—	—	341·45	3′	6	650	*0·4	—	—	—	—	— ·189	
720	—	—	—	5·30	1	3	365	*0·4	—	—	—	—	— ·947	
721	—	—	—	351·54	2	3	650	—	—	—	—	—	— ·969	
722	γ Leonis	10 12	79 24	107·97	5′	5	365	2·88	3′	6	365	2—3′	1853·192	
723	—	—	—	107·64	6	5	277	2·94	4	6	277	—	— ·247	
724	—	—	—	107·92	4′	5	—	3·03	2′	6	—	—	— ·963	
725	—	—	—	108·71	5′	5	—	3·11	3	6	—	—	— ·966	
726	Σ 1517	11 6	69 57	283·93	3′	5	365	*0·8	—	—	—	8—8	1853·192	
727	—	—	—	288·32	4	5	—	*0·7	—	—	—	—	— ·247	
728	h 4423	10	135 2	273·63	4′	5	277	1·82	3	6	277	7—7′	1853·900	
729	—	—	—	272·80	4′	5	—	2·06	3	6	—	—	— ·947	
730	—	—	—	276·60	3	5	—	2·09	1′	4	—	—	— ·963	

687 Slightly tremulous.

696 A follows Procyon by 42ˢ·6, at an angle of 100°·5.

699 The 3 are almost exactly in line.

701 Exactly in line.

718 Doubtful.

719 Definition much better: small end of *egg* plainly directed *np* · doubtful if any advantage from using the higher power

720 Very doubtful.

721 Rather better.

726 In contact, very difficult; closer than ε Arietis.

* Estimated.

Reference Number.	Synonym.	A. R.	N. P. D.	Position Angle.	Weight.	No. of Observations.	Magnifying Power.	Distance.	Weight.	No. of Observations.	Magnifying Power.	Magnitudes.	Date.	Remarks.
		h. m.	° ′	°				″						
731	ξ Urs. Maj.	11 10	57 38	119·77	5′	5	365	2·99	3′	6	365	4′—5′	1853·192	
732	—	—	—	119·19	6	5	—	3·03	3′	6	—	—	— ·203	
733	—	—	—	119·09	4	5	277	3·01	2′	6	277	—	— ·914	
734	—	—	—	117·05	4′	5	—	3·21	2	6	—	—	— ·947	
735	ι Leonis	16	78 39	79·37	4′	5	365	2·47	3	6	365	4′—8	1853·192	A yellow, B lt. blue.
736	—	—	—	80·00	4′	5	277	2·42	3′	6	277	—	— ·225	
737	—	—	—	78·85	4	5	—	2·62	3	6	—	—	— ·947	
738	—	—	—	78·65	6	6	—	2·64	3	6	—	—	— ·971	
739	B 3574	18	150 48	303·40	4′	5	277	4·39	2′	6	277	7′—9	1853·947	
740	—	—	—	304·17	3	5	—	4·67	1	4	—	—	— ·969	
741	57 Urs. Maj.	21	49 49	6·67	5	5	277	5·24	4	6	277	6′—9′	1853·225	A white, B purple?
742	—	—	—	7·02	3′	5	—	5·30	2′	6	—	6′—10	— ·260	
743	γ Virginis	12 34	90 38	172·92	5	5	277	3·10	3′	6	277	4—4	1853·225	
744	—	—	—	173·68	4′	5	365	3·18	5	6	365	—	— ·247	
745	—	—	—	172·63	5′	5	277	3·05	4	6	277	—	— ·900	
746	—	—	—	173·45	4′	5	—	3·08	2′	6	—	—	— ·914	
747	h 4556	46	117 9	82·98	5	5	365	5·72	3	6	365	7′—10′	1854·004	
748	—	—	—	84·20	3	4	277	5·86	2	6	277	—	— ·010	
749	Σ 1757	13 27	89 33	44·68	4	5	365	2·07	3	6	365	8—9	1853·267	
750	—	—	—	50·76	4	5	—	1·95	2	6	—	8—9′	— ·925	
751	—	—	—	48·58	4	5	—	2·34	3	6	—	—	1854·004	
752	Σ 1837	14 17	100 59	320·81	4	5	277	1·52	2′	6	277	7—9	1853·149	
753	—	—	—	319·74	3′	5	365	1·40	2′	6	365	7—9′	— ·171	
754	—	—	—	318·12	4	5	277	1·75	2	6	277	7—9	— ·993	
755	—	—	—	315·67	4′	5	365	1·64	2	6	365	—	1854·007	
756	—	—	—	316·73	3	4	277	1·57	2	6	277	—	— ·010	
757	—	—	—	264·46	3′	5	174	4·74	2′	6	174	1—2	1852·645	
758	—	—	—	263·76	3′	5	—	4·74	2′	6	—	—	— ·648	
759	—	—	—	265·10	5	5	277	5·36	2	6	277	—	— ·650	
760	—	—	—	264·42	4	5	—	5·50	2	6	—	—	— ·653	
761	—	—	—	265·66	3	5	174	4·60	2′	6	174	—	— ·705	
762	—	—	—	265·61	3	5	365	4·91	2	6	365	—	— ·708	
763	—	—	—	264·95	3′	5	174	4·31	2′	6	174	—	— ·721	
764	—	—	—	265·33	3	5	—	4·40	2	6	—	—	— ·724	
765	—	—	—	266·97	3	5	—	4·43	2	6	—	—	— ·857	
766	—	—	—	265·87	3′	5	—	4·74	2	6	—	—	— ·859	
767	—	—	—	266·21	3	5	—	4·41	2	6	—	—	— ·873	
768	α Centauri	30	150 13	·77	5′	6	—	4·51	3	6	—	—	— ·890	
769	—	—	—	·69	7	6	277	4·65	5′	8	277	—	— ·933	Daylight.
770	—	—	—	·47	4	5	—	4·55	3	6	—	—	— ·941	
771	—	—	—	267·10	2′	5	—	4·53	2	6	—	—	— ·958	
772	—	—	—	267·47	3	5	174	4·46	2′	6	174	—	— ·971	
773	—	—	—	266·71	3	5	277	4·38	2′	6	277	—	— ·974	
774	—	—	—	267·27	4′	5	214	4·50	2	6	214	—	— ·993	
775	—	—	—	266·93	4′	5	365	4·43	5	8	365	—	1853·002	
776	—	—	—	267·12	6	6	277	4·52	4′	8	277	—	— ·013	
777	—	—	—	·21	6′	6	—	4·41	3′	6	—	—	— ·021	
778	—	—	—	·38	6′	6	—	4·44	4′	8	—	—	— ·024	
779	—	—	—	·19	4′	5	365	4·65	3′	6	365	—	— ·034	

758 Slightly flaring.
759 Flaring.
760 The distances are probably erroneous as the wire *fiddles* slightly.
765 Taken at 11*h.* A. M.
774 Taken with Troughton's Micrometer and Barlow lens.

Reference Number.	Synonym.	A. R.	N. P. D.	Position Angle.	Weight.	No. of Observations	Magnifying Power	Distance.	Weight.	No. of Observations.	Magnifying Power.	Magnitudes.	Date.	Remarks.
		h. m.	° ′	°				″						
780	α Centauri	14 30	150 13	267·85	4′	5	365	4·56	4	6	365	1—2	1853·053	
781	(*Continued.*)	—	—	·77	6	5	293	4·53	5	8	293	—	— ·056	
782	—	—	—	·75	6′	6	277	4·69	4′	8	277	—	— ·070	Daylight.
783	—	—	—	·49	5	5	—	4·58	3	6	—	—	— ·089	
784	—	—	—	268·98	4	5	—	4·61	2′	6	—	—	— ·092	
785	—	—	—	268·12	3′	5	—	4·73	2	6	—	—	— ·103	Twilight.
786	—	—	—	267·85	4	5	—	4·77	2′	6	—	—	— ·119	
787	—	—	—	267·75	4	5	277	4·57	3′	6	277	1 —1′	— ·180	
788	—	—	—	268·06	5	6	—	4·52	3′	6	—	—	— ·182	
789	—	—	—	268·65	2′	4	—	—	—	—	—	—	— ·220	Flaring.
790	—	—	—	269·59	4	5	—	4·64	3′	6	—	—	— ·247	
791	—	—	—	269·47	5	5	365	4·64	3′	6	365	—	— ·267	
792	—	—	—	269·24	5′	5	—	4·43	3′	6	—	—	— ·272	
793	—	—	—	273·35	3	5	277	3·96	2	6	277	—	— ·870	
794	—	—	—	274·78	4	5	—	4·37	2′	6	—	—	— ·881	
795	—	—	—	275·14	4′	5	174	4·23	3	6	174	—	— ·887	
796	—	—	—	275·46	5′	6	—	4·45	3′	6	—	—	— ·903	Flaring.
797	—	—	—	273·68	4′	5	—	4·42	2′	6	—	—	— ·944	
798	—	—	—	274·96	5′	6	277	4·46	3	6	277	—	— ·980	
799	—	—	—	276·05	6	6	—	4·23	3	6	—	—	— ·991	
800	—	—	—	276·78	6′	6	—	4·41	2′	6	—	—	— ·993	Daylight.
801	—	—	—	276·79	4	5	—	4·04	2′	6	—	—	1854·026	
802	—	—	—	277·26	5′	5	365	4·22	3′	6	365	—	— ·040	
803	—	—	—	277·58	4	5	—	3·97	3	6	—	—	— ·042	
804	—	—	—	276·56	4′	5	277	4·09	3′	6	277	—	— ·070	
805	—	—	—	276·96	4′	5	—	4·02	2	4	—	—	— ·097	
806	—	—	—	278·39	6	6	—	4·09	4′	8	—	—	— ·100	
807	—	—	—	278·29	4′	5	—	4·09	3	6	—	—	— ·103	
808	ζ Bootis	34	75 38	126·29	3	4	365	*1·2	—	—	—	4 —4	1852·603	
809	—	—	—	126·11	4	5	—	1·18	2′	6	365	—	1853·196	
810	—	—	—	125·70	4′	5	—	1·13	2′	6	—	—	— ·202	
811	—	—	—	126·89	3	5	277	1·31	1′	4	277	—	— ·944	
812	—	—	—	126·31	4′	5	365	1·36	2′	6	365	—	1854·040	
813	ε Bootis	38	62 18	324·02	5	5	365	2·65	3′	6	365	3 —6′	1853·196	A orange, B green.
814	—	—	—	322·23	5′	5	—	2·62	3′	6	—	—	— ·202	
815	h 4715	46	137 16	279·41	5	5	365	2·54	3	6	365	7 —7′	1854·040	
816	—	—	—	277·25	4	5	—	—	—	—	—	—	— ·042	
817	π Lupi	55	136 28	281·62	3′	5	277	1·33	1′	6	277	5·7–6	1853·125	
818	—	—	—	281·15	3′	5	365	1·31	2	6	365	—	— ·139	Furry.
819	—	—	—	286·80	3	5	277	*0·9	—	—	—	5 —5	— ·993	In contact.
820	—	—	—	283·05	4	6	365	1·13	2′	6	365	—	1854·040	Nearly equal.
821	44 Bootis	59	41 46	238·27	4	4	365	4·53	3′	6	365	5 —6	1853·267	
822	—	—	—	238·70	5′	5	—	4·41	3′	6	—	—	— ·272	
823	η Cor. Bor.	15 17	59 10	256·97	1′	4	650	*0·4	—	—	—	6 —?	1853·196	
824	—	—	—	79·20	1	3	—	—	—	—	—	—	— ·201	
825	—	—	—	296·42	1	4	—	*0·5	—	—	—	6 —6′	1854·040	
826	—	—	—	282·79	2	5	—	—	—	—	—	—	— ·043	
827	—	—	—	281·32	1′	4	—	—	—	—	—	—	— 045	

781 Taken with Lerebours' Micrometer.
783 At sunrise.
784 Just before sunrise.
788 Taken with triangular aperture, not much improved.
808 Clearly divided; nearly equal.
809 The preceding star seems now the smaller if any thing.
817 The measure of distance is too great, wires fiddle.
823 Very doubtful; at times it appears almost round.
824 Even more doubtful than before. Angle may be 259.
825 Well elongated with 365 · little improvement with 650.
826 Seen better than yesterday, definition excellent.

* Estimated.

Reference Number.	Synonym.	A. R.	N. P. D.	Position Angle.	Weight.	No. of Observations	Magnifying Power.	Distance.	Weight.	No. of Observations	Magnifying Power.	Magnitudes.	Date.	Remarks.
		h. m.	° ′	°				″						
828	μ^2 Bootis	15 19	52 8	269·90	1′	4	365	*0·5	—	—	—	8′—8′	1853·196	Nearly equal.
829	—	—	—	262·76	3	5	—	*0·4	—	—	—	—	— ·247	
830	—	—	—	254·00	1′	4	—	*0·5	—	—	—	8—8	1854·048	
831	—	—	—	256·79	2′	5	650	—	—	—	—	—	— ·051	
832	γ Lupi	25	130 39	274·62	3	5	365	1·14	1′	6	365	3′—4	1853·125	
833	—	—	—	272·41	3′	5	—	0·98	2′	6	—	4—4·2	— ·130	
834	γ Cor. Bor.	36	63 14	294·55	2′	5	650	*0·5	—	—	—	5—7	1853·196	
835	—	—	—	293·86	1′	5	365	—	—	—	—	—	— ·199	
836	51 Libræ AB	56	100 57	43·13	3	5	365	*0·7	—	—	—	4′—5	1852·650	
837	—	—	—	50·29	3	5	—	0·97	2	6	365	—	1853·125	
838	—	—	—	46·25	4	5	—	0·90	2′	6	—	—	— ·130	
839	—	—	—	49·00	3	5	—	*0·9	—	—	—	5—5′	1854·059	
840	—	—	—	47·32	2	5	—	—	—	—	—	—	— ·064	
841	AC	—	—	67·90	3	3	365	7·51	2	4	365	4′—7′	1853·125	
842	—	—	—	68·60	2	2	—	—	—	—	—	—	— ·130	
843	—	—	—	68·90	4	5	—	7·73	2′	6	365	5—8	1854·059	
844	—	—	—	69·88	2′	4	—	—	—	—	—	—	— ·064	
845	β Scorpii	57	109 23	25·58	5′	5	277	—	—	—	—	2′—5	1852·653	
846	—	—	—	25·29	5	5	365	13·59	2′	6	365	—	— ·705	
847	—	—	—	25·41	5′	5	—	13·81	2′	6	—	—	— ·708	
848	σ Cor. Bor.	16 9	55 46	177·62	4′	5	277	2·29	4′	8	277	6—6′	1853·141	
849	—	—	—	178·17	4′	5	365	2·04	3′	6	365	—	— ·144	
850	—	—	—	178·18	3	4	—	2·21	2	4	—	—	1854·045	
851	—	—	—	176·82	7	6	—	2·21	4	6	—	—	— ·048	
852	—	—	—	178·86	6′	5	—	2·32	3	6	—	—	— ·051	
853	λ Ophiuchi	23	87 41	13·35	3′	5	277	1·32	2	6	277	4′—6	1852·648	
854	—	—	—	12·79	3′	5	365	1·19	2	6	365	—	— ·651	
855	—	—	—	11·49	3	5	—	1·12	2	6	—	—	— ·724	Daylight.
856	—	—	—	13·32	3	5	—	1·22	1′	4	—	4′—6′	1854·059	
857	—	—	—	15·60	3	5	—	1·41	1′	6	—	—	— ·065	
858	—	—	—	16·83	3	5	—	1·40	2	6	—	—	— ·067	
859	ζ Herculis	36	58 8	81·68	3′	5	365	1·73	2′	6	365	4—8	1853·147	
860	—	—	—	80·56	3	5	277	1·44	2′	6	277	—	— ·149	
861	—	—	—	78·14	3	5	365	1·52	2	6	365	4—8′	1854·059	
862	—	—	—	78·29	2′	4	—	1·53	1	4	—	—	— ·065	
863	—	—	—	77·69	2′	5	—	1·52	1	4	—	—	— ·067	
864	36 Ophiuchi AB	17 6	116 22	34·32	4′	5	277	4·07	5′	8	277	5—5	1854·070	Nearly equal.
865	—	—	—	34·41	5′	5	—	4·19	5	8	—	—	— ·073	
866	— AC	—	—	298·30	3	2	—	*150·	—	—	—	5—8′	— ·070	
867	—	—	—	298·37	3	2	—	—	—	—	—	—	— ·073	
868	— BC	—	—	296·85	3	2	—	—	—	—	—	5—8′	— ·073	

828 Very difficult. Tried 650 but with no improvement.

829 Very difficult, position from $\mu = 171^{\circ}\!\cdot\!7$.

832 Discs in contact; measured distance too great, wires fiddle.

833 Separated by fits; the preceding star certainly the least, but the difference is scarcely ¼ a magnitude.

834 Elongation plainly seen with 365; doubtful if any advantage from the higher power; this star is now much easier than η.

835 Elongation less decided than yesterday, the definition being not quite so perfect.

836 Daylight; notched.

837 Discs in contact.

840 Hazy and flying clouds; definition blurred.

845 Distance rejected as the wires fiddle.

857 Hazy with cir-strat., clouds; def. blurred.

864 Position may be 214°.

865 The stars are still almost exactly equal, the *sp.* the larger if any thing.

* Estimated.

Reference Number	Synonym.	A. R.	N. P. D.	Position Angle.	Weight.	No. of Observations.	Magnifying Power.	Distance.	Weight.	No. of Observations.	Magnifying Power	Magnitudes	Date.	Remarks.
		h. m.	° ′	°				″						
869	—	—	—	117·25	4	5	365	4·62	3′	6	365	3′—5′	1852·716	
870	—	—	—	116·64	5	5	—	4·31	3	6	—	—	— ·727	
871	—	—	—	117·53	5′	5	—	4·24	3	6	—	—	— ·738	
872	—	—	—	117·97	5	5	—	4·49	2′	6	—	—	— ·740	
873	—	—	—	117·75	5	5	—	—	—	—	—	—	— ·763	Daylight.
874	—	—	—	117·92	5	5	—	4·52	3′	6	365	—	— ·782	
875	—	—	—	117·41	5	5	—	4·49	3	6	—	—	— ·784	
876	—	—	—	117·03	4′	5	—	4·84	3	6	—	—	— ·790	
877	—	—	—	117·39	5′	5	—	4·63	3′	6	—	—	— ·795	Daylight.
878	—	—	—	117·69	5′	5	—	4·70	3	6	—	—	— ·817	
879	—	—	—	117·99	4′	5	—	4·61	2′	6	—	—	— ·820	
880	—	—	—	117·73	4	6	277	4·35	2	6	277	—	— ·825	
881	—	—	—	117·90	5	5	—	—	—	—	—	—	1853·024	
882	—	—	—	117·86	6′	6	365	4·54	3′	6	365	—	— ·034	
883	—	—	—	117·74	6	5	—	4·49	3′	6	—	—	— ·037	
884	—	—	—	118·50	7	6	—	4·57	3′	6	—	—	— ·056	
885	—	—	—	118·06	4′	5	277	4·59	2′	6	277	—	— ·108	
886	—	—	—	·16	6	6	365	4·61	3′	6	365	—	— ·122	
887	α Herculis	17 8	75 26	·20	6	6	277	4·64	3	6	277	—	— ·133	
888	—	—	—	·25	6	6	—	4·66	3	6	—	—	— ·141	
889	—	—	—	·55	5	5	—	4·34	3′	6	—	—	— ·254	
890	—	—	—	·41	5	5	—	4·53	3′	6	—	—	— ·262	
891	—	—	—	·62	4	5	365	—	—	—	—	—	— ·267	Daylight.
892	—	—	—	·45	6	6	—	4·36	3′	6	365	—	— ·273	
893	—	—	—	·56	7	6	—	4·57	5	8	—	—	— ·278	
894	—	—	—	117·34	4′	5	277	4·41	2′	6	277	—	— ·762	
895	—	—	—	·08	7	5	365	4·64	4	6	365	—	— ·776	
896	—	—	—	·65	7	5	277	4·51	3′	6	277	—	— ·778	
897	—	—	—	·49	5′	5	—	4·49	2′	6	—	—	— ·786	
898	—	—	—	·99	5	5	365	4·61	2′	6	365	—	1854·034	
899	—	—	—	·87	7	6	—	4·39	4′	8	—	—	— ·040	
900	—	—	—	·63	3	5	—	4·24	3	6	—	—	— ·048	
901	—	—	—	·35	4	5	—	4·32	4′	8	—	—	— ·051	
902	—	—	—	·84	7	6	—	4·46	4′	8	—	—	— ·086	
903	—	—	—	118·10	7	6	—	4·50	3	6	—	—	— ·097	
904	—	—	—	118·17	7	6	—	4·39	3′	8	—	—	— ·100	
905	δ Herculis	9	64 59	176·80	5	5	365	22·47	3′	6	365	4 —9′	1852·724	
906	—	—	—	177·26	7	6	277	22·21	5′	8	277	—	— ·738	
907	—	—	—	177·47	5′	5	365	22·00	3′	6	365	—	1853·144	
908	—	—	—	177·83	5′	5	277	21·98	3′	6	277	—	— ·166	
909	—	—	—	176·38	6	6	365	21·92	4	6	365	4 —10	1854·073	
910	—	—	—	177·74	7′	6	277	21·88	3	6	277	—	— ·078	
911	—	—	—	177·31	6′	6	—	21·78	4	6	—	—	— ·086	
912	ρ Herculis	18·5	52 43	309·35	4′	5	365	3·83	3	6	365	4′—6	1852·779	A white, B green. Daylight.
913	—	—	—	308·59	5′	5	—	3·57	4	6	—	—	— ·782	
914	—	—	—	308·80	6	5	—	3·73	3′	6	—	—	— ·784	
915	—	—	—	309·55	5	5	277	3·80	3′	6	—	—	— ·770	
916	τ Ophiuchi	55	98 10	239·88	4′	6	365	1·14	2′	6	365	5 —6	1852·648	
917	—	—	—	238·95	3	5	—	1·06	2	6	—	—	— ·651	

874 Definition excellent.

881 By the time the measures of position were taken, B was too faint for distance.

884 Definition superb

888 Fog; some dew on the object glass, in spite of the cap.

904 Sky hazy, definition excellent.

Reference Number.	Synonym.	A. R.	N. P. D.	Position Angle.	Weight.	No. of Observations.	Magnifying Power.	Distance.	Weight.	No. of Observations.	Magnifying Power.	Magnitudes	Date.	Remarks
		h. m.	° ′	°				″						
918	70 Ophiuchi	17 58	87 27	113·79	5′	5	365	6·61	3	6	365	6 —7	1852·724	
919	—	—	—	114·49	6′	5	277	6·90	3′	6	277	—	— ·752	
920	—	—	—	113·78	5′	5	—	6·66	3′	6	—	—	— ·757	
921	—	—	—	113·86	4′	5	—	6·16	3	6	365	—	1854·067	
922	—	—	—	113·80	4′	5	—	6·44	3′	6	277	—	— ·073	
923	—	—	—	113·96	6	5	—	6·33	3′	6	—	—	— ·081	
924	—	—	—	113 06	6	5	365	6·47	4′	8	365	—	— ·097	
925	59 Serpentis	18 20	89 54	314·32	5	5	365	3·18	3	6	365	6′—8′	1852·738	
926	—	—	—	314·60	6	5	277	3·68	3′	6	277	—	— ·749	
927	—	—	—	314·77	5′	5	—	3·80	3	6	—	—	— ·752	
928	—	—	—	314·42	5	5	365	3·91	3	6	365	—	— ·776	
929	—	—	—	313·44	4′	5	—	3·71	3	6	—	—	— ·814	
930	γ Cor. Aust.	56	127 16	2·00	3	5	365	2·10	2′	6	365	5′—5′	1852·672	
931	—	—	—	0·15	5	6	—	1·72	3	6	—	—	— ·707	
932	—	—	—	0·21	3′	5	—	2·04	2	6	—	5 —5	— ·709	
933	—	—	—	1·87	4	5	—	1·83	4	6	—	—	— ·779	
934	—	—	—	358·17	3	5	—	1·93	2	4	—	5′—5′	1853·196	
935	—	—	—	359·77	3′	4	277	1·75	5	8	277	—	— ·262	
936	—	—	—	0·80	5	6	365	1·86	5′	8	365	—	— ·264	Sunrise.
937	—	—	—	358·21	4	5	—	1·87	2′	6	—	5 —5	— ·776	
938	—	—	—	358·69	4′	5	277	1·79	3′	6	277	—	— ·778	Daylight.
939	—	—	—	358·60	4′	5	365	1·80	2′	6	365	—	— ·784	
940	—	—	—	356·41	5	6	277	1·78	3′	8	277	—	1854·106	
941	—	—	—	356·70	5	6	—	1·83	2′	6	—	—	·117	
942	λ Cygni AB	20 42	54 4	99·10	2	3	365	*0·7	—	—	—	5′—6	1853·882	
943	—	—	—	99·10	1	3	—	—	—	—	—	—	— ·891	
944	AC	—	—	104·36	2	2	—	—	—	—	—	5′—10	— ·882	
945	—	—	—	104·85	3′	3	—	85·95	1	2	365	—	— ·891	
946	ε Equulei AB	52	86 16	287·50	3	5	277	*0·8	—	—	—	6 —7	1853·880	In contact.
947	—	—	—	285·98	2′	4	365	—	—	—	—	—	— ·882	Barely divided.
948	AC	—	—	74·90	3′	4	277	*10·	—	—	—	6 —7	1853·880	
949	—	—	—	75·78	3	3	365	—	—	—	—	—	— ·882	
950	12 Aquarii	56	96 25	191·87	5	5	277	2·77	3	6	277	6′—8′	1852·814	
951	—	—	—	191·92	4′	5	365	2·94	3	6	365	—	— ·817	
952	—	—	—	192·40	4′	5	—	2·67	4	6	—	—	— ·820	
953	—	—	—	190·40	4	5	277	2·87	2′	6	277	—	— ·852	
954	61 Cygni	21 0	52 0	104·02	6	5	277	17·40	3′	6	277	6 —6	1852·752	
955	—	—	—	104·54	7	5	—	17·41	3′	6	—	—	— ·760	
956	—	—	—	105·04	5′	5	365	17·65	3′	6	365	—	1853·890	
957	—	—	—	104·48	7	5	—	17·71	3′	6	—	—	— ·893	
958	θ Indi	9	144 4	299·26	3′	5	277	3·67	3	6	277	6 —8	1852·733	
959	—	—	—	298·53	4	5	—	3·23	2	6	—	—	— ·740	
960	—	—	—	297·71	5	5	—	3·11	3	6	—	—	— ·749	
961	—	—	—	298·58	3	5	—	3·14	2′	6	—	—	— ·762	
962	B.A.C. 7578	38	138 0	8·89	7	5	277	32·86	3′	6	277	6′—9	1852·752	
963	—	—	—	9·20	5′	5	174	32·93	3	6	174	—	— ·776	
964	—	—	—	8·59	6	5	277	33·02	4	6	277	6′—9′	1853·893	
965	—	—	—	8·49	5′	5	—	33·25	4	6	—	—	— ·896	

926 Wires fiddle slightly
932 Flying clouds; stars moulding.
934 Just after sunrise; rather faint; heavy dew.
935 Just before sunrise, wind S. sky hazy; no dew.
940 Just before sunrise, the Northern star is now the brighter if any thing.

* Estimated

Reference Number.	Synonym.	A. R.	N. P. D.	Position Angle.	Weight.	No. of Observations.	Magnifying Power.	Distance.	Weight.	No. of Observations.	Magnifying Power.	Magnitudes.	Date.	Remarks.
		h. m.	° '	°				''						
966	h 5319	22 3	129 2	114·99	4'	5	277	1·34	2	6	277	8—8	1852·733	
967	—	—	—	112·24	5	5	—	1·55	3'	6	—	—	— ·747	Nearly equal.
968	ξ Aquarii	21	90 49	346·74	4'	5	277	3·65	3'	6	277	4—4	1852·725	
969	—	—	—	346·92	5'	5	—	3·89	4	6	—	—	— ·733	
970	γ Pisc. Aust.	44	123 40	274·08	5	6	277	4·16	3	6	277	4'—9'	1852·776	A yellow, B reddish.
971	—	—	—	274·40	4'	5	365	4·17	3	6	365	—	— ·784	
972	—	—	—	273·48	4'	5	277	4·16	3	6	277	—	— ·814	
973	—	—	—	273·75	5'	5	365	4·20	3	6	365	—	— ·817	
974	—	—	—	273·92	4	5	277	4·22	2'	6	277	—	1853·901	
975	—	—	—	275·83	5'	6	—	4·20	3'	6	—	—	— ·910	
976	AB	—	—	11·77	4'	5	277	3·03	3'	6	277	5'—9	1852·733	
977	—	—	—	11·28	4'	5	—	2·48	4	6	—	—	— ·747	
978	—	—	—	10·60	3	5	—	2·55	2'	6	—	5'—8'	— ·937	
979	—	—	—	12·64	4'	5	—	2·50	3'	6	—	—	— ·943	
980	θ Gruis	58	134 21	13·61	3	4	327	2·61	2'	6	327	—	— ·995	
981	—	—	—	13·85	4'	5	277	2·36	3'	6	277	—	1853·000	
982	AC	—	—	292·60	1'	1	277	—	—	—	—	5'—8'	1852·733	
983	—	—	—	292·90	4	2	—	159·33	1	2	277	—	— ·747	
984	—	—	—	292·80	3	2	—	—	—	—	—	—	— ·943	
985	94 Aquarii	23 10	104 18	345·22	7	6	282	13·29	4	6	282	5'—9	1852·896	
986	—	—	—	345·60	5'	5	277	13·67	3'	6	277	—	— ·943	
987	—	—	—	345·64	5	5	—	13·88	3'	6	—	—	— ·970	
988	—	—	—	345·82	5'	5	—	13·68	3'	6	—	—	1853·011	
989	θ Phœnicis	31	137 30	270·77	4	5	277	3·87	4	6	277	6—6	1852·776	
990	—	—	—	271·03	3'	5	365	4·04	3	6	365	—	— ·784	
991	—	—	—	269·41	4	5	277	4·05	3	6	277	—	— ·814	
992	—	—	—	268·97	5'	5	365	4·15	1'	4	365	—	— ·817	
993	h 5437	53	143 56	290·48	3	5	277	2·86	1'	4	277	5'—10'	1852·825	
994	—	—	—	294·75	2	5	—	—	—	—	—	7—12	— ·943	
995	—	—	—	293·07	2'	5	—	2·94	1	4	277	6'—12	1853·011	
996	α Scorpii	16 20	116 6	272·46	3'	5	365	3·37	2	6	365	1—9'	1852·606	
997	—	—	—	272·16	3	5	—	2·74	2'	6	—	—	— ·647	
998	—	—	—	273·67	4	5	277	2·81	3	6	277	1—8'	— ·649	

966 Sky hazy, definition good.
970 Hazy and flying clouds; definition fair.
972 Sky hazy, definition good.
980 Taken with Troughton's Micrometer and Barlow lens.
985 Troughton's Micrometer.
991 Sky hazy, and flying clouds.
993 Rather difficult.
994 Very difficult; the sky is hazy, yet the former estimate of the magnitudes must surely be too high.
996 Omitted in its proper place through inadvertence.

N. B.—All the Observations given in this Appendix were taken with Dollond's Micrometer, unless otherwise noted.

Reference Number.	Synonym.	A. R.		N. P. D.		Position Angle.	Weight.	No. of Observations.	Epoch 1850. +	Distance.	Weight.	No. of Observations	Epoch 1850. +	Magnitudes.
		h.	m.	°	′	°			yr.	″			yr.	
389	h 1007 AB AC	0	6	63	51	53·07 224·40	4 4	8 6	4·000 4·000	*0·7 *18·	— —	— —	— —	7 — 8 7 — 12
390	h 3375		26	125	48	164·99	11	10	2·750	6·61	6	12	2·750	7 — 7
391	η Cassiopeæ		40	32	59	107·97 109·00 109·77	12 10′ 27	10 10 22	2·756 3·135 3·986	7·985 7·910 8·007	8 7 15	12 12 26	2·756 3·135 3·991	4 — 8′ 4 — 9 3·8 — 9
392	36 Andromedæ		47	67	11	338·06	11	15	3·962	1·26	4′	12	3·971	6′ — 7
393	S 392		57	96	16	166·21	8′	10	2·815	12·55	4′	12	2·815	8·7 — 9
394	ζ Phœnicis	1	2	146	4	244·12	8′	10	2·763	5·995	5	12	2·764	6 — 8′
395	Cyc LX AB AC		29	83	7	27·24 68·70	8 2	10 2	2·942 2·825	1·68 *80·0	5′ —	12 —	2·931 —	7 — 7 7 — 11′
396	h 3447		29	120	42	82·46	8′	10	2·903	2·50	7′	18	2·901	6 — 8
397	p Eridani		34	142	56	264·84 263·24	19 14	20 15	2·758 3·990	4·14 4·36	12′ 7	24 12	2·758 4·001	6′ — 6′ 6 — 6
398	BAC 547 AB AC AD		40	42	51	44·54 359·73 275·73	7′ 4′ 1	9 5 2	3·158 3·157 3·151	1·90 19·87 164·10	6′ 2 1	12 4 1	3·158 3·158 3·151	6′ — 7 6′ — 12 6′ — 12
399	α Piscium		55	87	57	328·44 328·49 327·86	16 9 16	15 10 15	2·683 3·127 *3·957	3·48 3·33 3·22	11 6′ 11	20 12 18	2·689 3·128 3·957	5′ — 5′ — —
400	AC γ Androm. AB		55	48	24	111·31 106·83 61·46	2′ 12 5	6 18 5	2·784 3·940 3·919	*0·5 *0·4 10·38	— — 5	— — 10	— — 3·919	6′ — 7 — 2′ — 6′
401	h 3485	2	6	140	2	139·30	10	14	2·995	4·51	3′	12	2·998	10·3 — 10·8
402	h 3494		14	126	8	110·05	6′	9	2·822	1·96	1′	4	2·825	9 — 9
403	γ Ceti		36	87	26	290·97	9	10	3·061	2·70	5′	12	3·060	3′ — 7
404	ε Arietis		50	69	16	196·15	17	22	3·497	1·08	6	20	3·678	5′ — 6
405	θ Eridani		52	130	49	83·25 82·88	24 10′	20 10	2·784 3·158	8·025 7·83	14 7	26 12	2·780 3·158	3·5 — 4·2 —
406	BAC 936		52	58	11	187·77	10	10	3·122	8·54	6	12	3·122	7 — 8′
407	12 Eridani	3	6	119	34	309·82	20	20	2·983	3·29	10	18	2·989	4 — 7
408	h 3565		12	109	4	110·43	11	11	3·079	5·56	7′	12	3·079	6 — 9
409	S 431		29	89	54	238·21	12	11	3·983	6·33	7′	12	3·983	7 — 9
410	f Eridani		43	128	5	202·61	34	31	3·075	7·07	17	30	3·058	5·3 — 5·7
411	39 —	4	7	100	38	151·23	18	16	3·082	6·50	9	18	3·084	5′ — 9
412	h 3632		9	120	28	164·63	9	9	3·985	10·91	6	12	3·985	8 — 11

394 Little or no change.

395 The angle progresses 0°·3 per annum; distance apparently on the increase.

396 Still no apparent change since 1846.

400 The angle continues to recede, and the decrease in distance is accelerating—the star should be closely watched.

401 Probably unchanged.

402 The angle appears to have receded.

410 The angle seems slowly advancing; distance steady.

* Estimated.

Reference Number.	Synonym.	A. R.	N. P. D.	Position Angle.	Weight.	No. of Observations.	Epoch 1850. +	Distance.	Weight.	No. of Observations.	Epoch 1850. +	Magnitudes.
		h. m.	° ′	°			yr.	″			yr.	
413	Σ 544 AB BC	4 18	99 5	266·61 353·45	7 8′	6 14	3·090 3·090	126·95 2·33	2 6′	2 12	3·090 3·091	8′ — 9 9 — 10
414	80 Tauri	22	74 44	10·20	6′	10	3·139	1·50	5	12	3·138	6 — 9·2
415	Σ 566	28	36 50	303·70	6′	10	3·194	1·94	5′	12	3·194	6′ — 8′
416	B.A.C. 1573	59	125 41	315·73	18′	25	3·497	2·835	13	30	3·474	5·6 — 9·9
417	h 3728	5 4	131 25	260·53	6′	10	3·080	9·76	4′	12	3·082	7 — 11′
418	ϰ Leporis AB AC	6	103 7	359·56 58·85	9 1	10 1	3·106 3·090	2·565 *210·	8 —	12 —	3·106 —	4′ — 8′ 4′ — 8
419	h 3752 AB AC	16	114 55	107·46 105·87	10′ 11	10 7	3·075 3·073	2·865 58·77	7 4	12 10	3·074 3·070	6 — 7 6 — 9′
420	η Orionis	17	92 32	87·04 83·76	10 6′	14 10	3·123 3·993	1·07 *0·75	7′ —	20 —	3·123 —	4 — 6′ 3′ — 5
421	32 —	23	84 10	201·97	5′	9	3·034	1·11	2	6	3·036	5 — 7′
422	33 —	23	86 50	25·88	8	10	2·945	1·87	5′	12	2·953	6 — 8
423	B.A.C. 1728	24	73 3	141·32	11	10	3·086	9·48	7′	12	3·082	6′ — 6′
424	θ Orionis AB AC AD Aa BE	28	95 30	311·21 60·88 343·38 123·40 352·05	5 5 3 4′ 5	4 5 4 6 7	3·024 3·024 3·022 3·021 3·020	12·92 13·59 16·80 3·26 3·98	4 4 3 1 3	8 8 8 4 8	3·022 3·022 3·022 3·014 3·019	4·7 — 7 4·7 — 7 4·7 — 7·7 4·7 — 14·5 7 — 11·5
425	42 —	28	94 54	219·10	6′	11	3·151	1·65	1′	4	3·145	5 — 10′
426	26 Aurigæ	29	59 56	267·43	9′	10	3·195	12·42	3′	10	3·195	5 — 10
427	ζ Orionis	33	92 2	149·94 151·56 148·89	20 20 11′	22 20 13	3·185 3·770 4·064	2·29 2·32 2·32	15 13 6′	26 24 12	3·185 3·771 4·064	2 — 5′ — —
428	h 3830	59	118 40	2·03	8	10	4·053	6·45	6′	12	4·052	9′ — 9′
429	h 3831	59	131 9	136·16	6	10	4·052	2·70	4	12	4·053	10 — 10
430	h 3834 Aa AB	6 0	135 5	237·31 320·19	6′ 4′	9 3	4·050 4·054	2·58 173·76	2′ 1	6 1	4·042 4·042	6 — 11 6 — 6′
431	Δ 23	1	138 28	350·69 351·47	13 8′	15 10	2·734 3·993	2·81 2·57	8 5′	18 12	2·733 3·991	7·2 — 7·2 7′ — 7′
432	B.A.C. 2048	14	149 7	225·28	3	3	3·148	†40·55	2′	4	3·148	7 — 8′
433	B.A.C. 2080	19	69 7	205.34	13	10	3·135	31·44	7	12	3·136	6 — 7′
434	Σ 910 AB BC	19	89 28	151·28 165·74	5 8′	5 13	3·168 3·162	66·72 *0·67	2 —	2 —	3·172 —	6·8 — 9·2 9·2 — 9·3
435	38 Gemin.	46	76 38	169·55	9′	10	2·779	5·98	7	12	2·780	5′ — 8
436	μ Can. Maj.	49	103 51	337·65	10′	11	3·065	2·89	7	12	3·065	5′ — 9
437	δ Gemin.	7 11	67 45	202·23	10′	10	2·783	7·06	7	12	2·783	3′ — 9

414 The suspected orbital movement of this star is not confirmed, but it should be carefully watched, as the changes noticed in the angle may perhaps prove to be parallactic.

415 The angle appears receding, and the distance increasing.

427 These Observations were taken as trials of parallax, and the differences are in the right direction.

431 The differences are distressingly irregular.

436 The angle appears slowly receding, and the distance decreasing.

437 A probable advance of about 0°·2 per annum.

* Estimated. † Diff. declination.

Reference Number.	Synonym.	A. R. h. m.	N. P. D. ° ′	Position Angle. °	Weight.	No. of Observations.	Epoch 1850. + yr.	Distance. ″	Weight.	No. of Observations	Epoch 1850. + yr.	Magnitudes.
438	π Argus	7 12	126 50	212·17	13′	10	3·031	68·70	4′	8	3·031	5 —9′
439	Castor AB	25	57 47	247·32	20	15	3·045	5·083	9′	18	3·061	2 —2′
				247·31	11	11	4·037	5·24	6′	12	4·044	—
	Castor AC			163·38	4	3	4·067	72·92	1′	2	4·067	2 —11
440	S 552	28	113 9	287·97	10	10	3·218	8·68	7	12	3·218	6′—6′
441	Cyc. 299	32	84 26	138·33	8′	11	3·218	1·475	7	12	3·218	6·7— 6·7
442	Cyc. 301	33	116 28	319·08	13	10	3·218	9·71	7′	12	3·218	5′ —5′
443	ζ Cancri AB	8 4	71 54	322·04	12	15	3·196	1·22	8	18	3·196	6 — 7
				317·24	8	10	3·947	1·15	4′	12	3·944	—
	ζ Cancri AC			142·09	15	15	3·196	4·89	6	12	3·196	6 — 7
				139·99	8′	8	3·956	4·94	5′	12	3·950	—
444	h 4128	36	149 47	220·92	11	14	4.003	2·06	5	12	3·983	7·7— 8·5
445	ε Hydræ	39	83 3	209·12	8′	9	3·241	3·33	8′	12	3·241	4′— 7
				209·63	8′	10	3·994	3·265	7	14	4·000	—
446	B.A.C. 3118	9 0	27 42	25·43	10	10	3·133	24·82	6	12	3·133	7′—7′
447	ω Leonis	20	80 18	343·34	5	11	3·183	*0·45	—	—	—	6′— 7
				356·03	3	6	3·962	*0·4	—	—	—	—
448	γ —	10 12	69 24	107·37	11′	10	3·221	2·91	7′	12	3·221	2 —3′
				108·34	9′	10	3·965	3·07	5′	12	3·965	—
449	Σ 1517	11 6	69 57	286·27	7′	10	3·220	*0·75	—	—	—	8 — 8
450	h 4423	10	135 2	274·06	12	15	3·931	1·97	7′	16	3·932	7 —7′
451	ξ Urs. Maj.	10	57 38	119·47	11′	10	3·198	3·01	7	12	3·197	4′—5′
				117·07	8′	10	3·931	3·11	5	12	3·931	—
452	ι Leonis	16	78 39	79·68	9	10	3·208	2·44	6′	12	3·210	4′— 8
				78·73	10	11	3·961	2·63	6	12	3·959	—
453	B. 3574	18	150 48	303·71	7′	10	3·956	4·47	3′	10	3·953	7′— 9
454	57 Urs. Maj.	21	49 49	6·81	8′	10	3.239	5·26	6′	12	3·238	6′— 9·7
455	γ Virginis	12 34	90 38	173·28	9′	10	3·235	3·12	8′	12	3·238	4 — 4
				173·00	10	10	3·906	3·06	6′	12	3·905	—
456	h 4556	46	117 9	83·44	8	9	4·006	5·78	5	12	4·006	7′—10′
457	Σ 1757	13 27	89 33	48·01	12	15	3·732	2·14	8	18	3·700	8 — 9·2
458	Σ 1837	14 17	100 59	318·41	19	24	3·670	1·56	11	30	3·620	7 — 9·2
459	α Centauri	30	150 13	264·88	28	40	2·678	4·795	18	48	2·683	1 —2
				266·49	15	21	2·873	4·520	9	24	2·872	—
				267·04	47	54	2·987	4·495	35	68	2·985	—
				267·84	38	41	3·075	4·627	27	52	3·071	—
				268·82	25	30	3·231	4·560	17	30	3·230	1 —1′
				275·23	39	44	3·940	4·333	22	48	3·933	—
				277·46	33	16	4·070	4·083	21	42	4·070	1 —1·7

449 There appears little or no change in this star.

454 The angle appears to recede nearly 0°·2 per annum, while the distance is slowly decreasing.

457 It may be doubted if this is a binary system, for the relative motion does not differ sensibly from a straight line, a proper motion of 0″·04 would account for the changes.

458 There appears a small change, of about—0°·3 per annum, in the angle, but little or none in the distance.

* Estimated.

Reference Number.	Synonym.	A. R.	N. P. D.	Position Angle.	Weight.	No. of Observations	Epoch 1850. +	Distance.	Weight.	No. of Observations.	Epoch 1850. +	Magnitudes.
		h. m.	° ′	°			yr.	″			yr.	
460	ζ Bootis	14 34	75 38	126·21	19	24	3·422	1·24	9	22	3·551	4 — 4
461	ε —	38	62 18	323·08	10	10	3·199	2·635	7	12	3·199	3 — 6′
462	h 4715	46	137 16	278·45	9	10	4·041	2·54	3	6	4·040	7 — 7′
463	π Lupi	55	136 28	283·02	14	21	3·576	1·24	6	18	3·551	5·3 — 5·5
464	44 Bootis	59	41 46	238·52	9′	9	3·270	4·47	7	12	3·270	5 — 6
465	η Cor. Bor.	15 17	59 10	257·86	2′	7	3·198	*0·4	—	—	—	6 — ?
				285·31	4′	13	4·043	*0·5	—	—	—	6 — 6′
466	μ² Bootis	19	52 8	265·14	4′	9	3·230	*0·45	—	—	—	8′ — 8′
				255·74	4	9	4·050	*0·5	—	—	—	8 — 8
467	γ Lupi	25	130 39	273·43	6′	10	3·128	1·03	4	12	3·128	3·8 — 4·1
468	γ Cor. Bor.	36	63 14	294·29	4	10	3·197	*0·5	—	—	—	5 — 7
469	51 Libræ AB	56	100 57	46·52	10	15	2·985	0·93	4′	12	3·128	4′ — 5
				48·35	5	10	4·061	*0·9	—	—	—	5 — 5′
	AC			68·18	5	5	3·127	7·51	2	4	3·125	4′ — 7′
				69·28	6′	9	4·061	7·73	2′	6	4·059	5 — 8
470	β Scorpii	57	109 23	25·43	16	15	2·688	13·70	5	12	2·706	2′ — 5
471	σ Cor. Bor.	16 9	55 46	177·90	9	10	3·142	2·18	8	14	3·142	6 — 6′
				177·87	16	15	4·048	2·25	9	16	4·048	——
472	α Scorpii	20	116 6	272·83	10′	15	2·634	2·94	7′	18	2·637	1 — 9
473	λ Ophiuchi	23	87 41	12·60	10	15	2·672	1·21	6	18	2·674	4′ — 6
				15·25	9	15	4·064	1·34	5	16	4·064	4′ — 6′
474	ζ Herculis	36	58 8	81·16	6′	10	3·148	1·58	5	12	3·148	4 — 8
				78·05	8	14	4·063	1·52	4	14	4·062	4 — 8′
475	36 Ophiuchi AB	17 6	116 22	34·37	10	10	4·072	4·13	10′	16	4·071	5 — 5
	AC			298·34	6	4	4·072	*180·	—	—	—	5 — 8′
	BC			296·85	3	2	4·073	—	—	—	—	5 — 8′
476	α Herculis	8	75 26	117·44	24	25	2·736	4·39	12	24	2·730	3 — 5′
				·45	20	20	2·788	4·616	13	24	2·788	——
				·80	14	16	2·820	4·58	7′	18	2·820	——
				118·02	24	22	3·039	4·58	10′	18	3·042	——
				·175	22′	23	3·127	4·62	12	24	3·127	——
				·515	27	27	3·268	4·46	15′	26	3·268	——
				117·39	24	20	3·776	4·53	12′	24	3·776	——
				·75	19	20	4·042	4·375	14	28	4·044	——
				118·04	21	18	4·094	4·45	11	22	4·094	——
477	δ —	9	64 59	177·07	12	11	2·732	22·31	9	14	2·733	4 — 9′
				·65	11	10	3·155	21·99	7	12	3·155	——
				·19	20	18	4·079	21·86	11	18	4·079	4 — 10
478	ϱ —	18·5	52 43	309·04	21	20	2·784	3·723	14	24	2·784	4′ — 6

460 Perhaps a change of about —0°·1 per annum in the angle; distance nearly constant.

461 The progression is still doubtful.

463 The angle seems to have decreased and the distance increased since Herschel's Cape measures, but the star is difficult and the change is therefore doubtful.

464 The slow progression of the angle continues, and the distance appears to be coming to a maximum.

465 These places agree very nearly with M. Yvon Villarceau's last orbit.

467 Apparently unchanged.

475 The components must certainly be variable.

476 For a discussion of the parallax of this star, see p. (19).

* Estimated.

MEAN RESULTS OF THE FOREGOING MEASURES OF DOUBLE STARS.

Reference Number.	Synonym.	A. R.		N. P. D.		Position Angle.	Weight.	No. of Observations	Epoch 1850. +	Distance.	Weight.	No. of Observations.	Epoch 1850. +	Magnitudes.
		h.	m.	°	′	°			yr.	″			yr.	
479	τ Ophiuchi	17	55	98	10	239·51	7′	11	2·649	1·10	4′	12	2·649	5 — 6
480	70 —		58	87	27	114·05 113·65	17 21	15 21	2·745 4·081	6·73 6·365	10 14	18 26	2·745 4·081	6 — 7 —
481	59 Serpentis	18	20	89	53	314·35	26	25	2·764	3·657	15	30	2·766	6′ — 8′
482	γ Cor. Aust.		56	127	16	0·97 359·58 358·51 356·55	15′ 11′ 13 10	21 15 15 12	2·719 3·246 3·779 4·111	1·905 1·827 1·817 1·800	11′ 12′ 8′ 6	24 20 18 14	2·725 3·252 3·779 4·110	5·2 — 5·2 5·5 — 5·5 5 — 5 —
483	λ Cygni {AB, AC}	20	42	54	4	99·10 104·67	3 5′	6 5	3·885 3·888	*0·7 85·95	— 1	— 2	— 3·891	5′ — 6 5′ — 10
484	ε Equulei {AB, AC}		52	86	16	286·81 75·31	5′ 6′	9 7	3·881 3·881	*0·8 *10·0	— —	— —	— —	6 — 7 6 — 7
485	12 Aquarii		56	96	25	191·69	18	20	2·825	2·80	12′	24	2·824	6′ — 8′
486	61 Cygni	21	0	52	0	104·30 104·73	13 12′	10 10	2·756 3·892	17·405 17·68	7 7	12 12	2·756 3·892	6 — 6 —
487	θ Indi		9	144	4	298·44	15′	20	2·746	3·30	10′	24	2·746	6 — 8·2
488	B.A.C. 7578		38	138	0	9·03 8·54	12′ 11′	10 10	2·763 3·894	32·89 33·14	6′ 8	12 12	2·763 3·894	6′ — 9 6′ — 9′
489	h 5319	22	3	129	2	113·54	9′	10	2·740	1·47	5′	12	2·742	8 — 8
490	ζ Aquarii		21	90	49	346·84	10	10	2·729	3·78	7′	12	2·729	4 — 4
491	γ Pis. Aust.		44	123	40	273·92 275·03	19′ 9′	21 11	2·798 3·906	4·173 4·21	12 6	24 12	2·798 3·907	4′ — 9′ —
492	θ Gruis {AB, AC}		58	134	21	11·53 12·78 292·81	9 15 8′	10 19 5	2·740 2·960 2·814	2·74 2·49 159·33	7′ 12 1	12 24 2	2·740 2·969 2·747	5′ — 9 5′ — 8′ 5′ — 8′
493	94 Aquarii	23	10	104	18	345·55	23	21	2·955	13·62	14	24	2·953	5′ — 9
494	θ Phœnicis		31	137	30	269·96	17	20	2·800	4·00	11′	22	2·795	6 — 6
495	h 5437		53	143	56	292·48	7′	15	2·918	2·89	2′	8	2·872	6·3 — 11.5

480 The distance is perceptibly decreasing.

482 There will probably be an appulse of this pair about 1863 ; and the period seems somewhere about 100 years.

486 The relative motion of these stars appears to differ little from a strait line, so that there may still be some doubt of their physical connection.

488 The changes of this pair are probably due to the proper motion of A.

492 Little or no change.

* Estimated.

PARALLAX OF α HERCULIS.*

In the notes to the 1st Series of Observations of Double Stars, made with the Lerebours' Equatorial, it was pointed out that the Observations of α Herculis gave indications of parallax. In consequence of these indications, the pair was sedulously observed during the years 1852-3, not only at the times when the effect of parallax on the position-angle was near a maximum, but also at intermediate points, with a view to ascertain if the curve of parallax could be traced out with any degree of precision.

The result has been most satisfactory, as will be apparent from an inspection of Fig. 5, where the observed positions are compared with the curve corresponding to a constant of parallax of $0''{\cdot}06$, which would cause an extreme variation in the angle of about $1^\circ{\cdot}0$. The dotted curve line shows the position angle at any given time as affected by a parallax of the above amount, and the mark ⊙ indicates the several observed positions, which will be seen to agree with the curve within a very moderate amount of error.

The effect of parallax on the position-angle is shown in Fig. 6, where AB is the meridian, C the position of the larger Star unaffected by parallax, or as it would appear from the Sun's Centre, DGEF the path described in consequence of parallax, DE the circle of latitude, and consequently D & E the points where the Star will be found when the earth's longitude is equal to, or differs by 180° from, that of the Star, S the place of the smaller Star supposed unaffected by parallax. Then, if x be the constant of parallax for the earth's mean distance from the Sun R the earth's radius vector for the time being, & λ the Star's latitude; ∴ $CG = R.x$ & $CD = R.x \sin. \lambda$; and the equation of condition for any observed angle of position will be

$$Z' = Z + \frac{57{\cdot}3\ \rho\ x \sin X}{d'} + (t - 1853{\cdot}0)\ m$$

Where	Z'	is the	*apparent*	position-angle in degrees.
	Z	– the	*mean*	position-angle for 1853·0.
	d'	– the	*apparent*	distance of the Stars.
	x	– the	constant	of parallax.
	ρx	– the	elliptic	radius CI for the given time.
	X	– the	angle	SCI reckoned from SC in the order FDGE.
	t	– the	time of observation.	
	m	– the	annual change in the position angle—arising from proper motion.	

The co-efficient ρ of the elliptic radius, and its inclination to the meridian from which to deduce X, can be computed in the following manner. Let L be the earth's longitude at the given time, l that of the Star, I the angle DCI, and A the angle ACD; and make $p = R. \cos (L - l)$.

$$q = R. \sin (L - l).$$

$$\text{then Cot. I} = \frac{p.\ \sin \lambda}{q}$$

$$\rho = q.\ \text{cosec I}$$

$$\& \quad X = Z + I - A$$

The angle A being the angle of *situation* of the Star is $= 6^\circ\ 28\tfrac{1}{2}' = 6^\circ.48$.

* For the Observations here discussed see pp. 66, 76, and (11), (17) of this Appendix.

The several equations of condition are then as follow:—

								Weight.
Z	—	1·247	m	—	$\frac{57·3 \times ·571 \times x}{4·57}$	=	117·73	16
Z	—	·748	m	+	$\frac{57·3 \times ·608 \times x}{4·45}$	=	118·43	27
Z	—	·264	m	—	$\frac{57·3 \times ·530 \times x}{4·39}$	=	117·44	24
Z	—	·212	m	—	$\frac{57·3 \times ·626 \times x}{4·616}$	=	117·45	20
Z	—	·180	m	—	$\frac{57·3 \times ·662 \times x}{4·58}$	=	117·80	14
Z	+	·089	m	—	$\frac{57·3 \times 175 \times x}{4·54}$	=	118·02	24
Z	+	·127	m	+	$\frac{57·3 \times ·181 \times x}{4·627}$	=	118.175	22·5
Z	+	·268	m	+	$\frac{57·3 \times ·629 \times x}{4·46}$	=	118·515	27
Z	+	·776	m	—	$\frac{57·3 \times ·609 \times x}{4·58}$	=	117·89	24
Z	+	1·042	m	—	$\frac{57·3 \times ·165 \times x}{4·375}$	=	117·75	19
Z	+	1·094	m	+	$\frac{57·3 \times ·054 \times x}{4·45}$	=	118·04	21

or subtracting 117° from each side, and calling Z — 117 = z.

1	z	—	1·247	m	—	7·16	x	=	·73
2	z	—	·748	m	+	7·76	x	=	1·43
3	z	—	·264	m	—	6·92	x	=	·44
4	z	—	·212	m	—	7·77	x	=	·45
5	z	—	·180	m	—	8·28	x	=	·80
6	z	+	·089	m	—	2·21	x	=	1·02
7	z	+	·127	m	+	2·24	x	=	1·75
8	z	+	·268	m	+	8·08	x	=	1·515
9	z	+	·776	m	—	7·70	x	=	·39
10	z	+	1·042	m	—	2·16	x	=	·75
11	z	+	1·094	m	+	·69	x	=	1·04

Multiplying these by their respective weights they become

16	z	—	19·95	m	—	114·6	x	=	11·68
27	z	—	20·20	m	+	209·6	x	=	38·61
24	z	—	6·34	m	—	166·1	x	=	10·56
20	z	—	4·24	m	—	155·4	x	=	9·00
14	z	—	2·52	m	—	115·9	x	=	11·20
24	z	+	·94	m	—	53·0	x	=	24·48
22·5	z	+	2·86	m	+	50·4	x	=	26·44
27	z	+	7·24	m	+	218·2	x	=	40·09
24	z	+	18·62	m	—	184·8	x	=	9·86
19	z	+	19·80	m	—	41·8	x	=	14·25
21	z	+	22·97	m	+	14·5	x	=	21·84

Resolving these by the method of least squares we find

$$z = ·9846 - ·0756\, m \qquad x = +\ ·06083 + ·0091\, m$$

m, being a very small quantity, will not materially affect the result; its value derived from these observations is = — 0°·045* which agrees pretty well with that derived from a comparison of the observations for the last 30 years; assuming this value we get,

$$Z = 117°·988 \pm ·023 \qquad x = 0''·05993 \pm ·00410$$

The probable error of x being only $\frac{1}{14}$ of itself, the value may be considered as pretty near the truth; this of course is only the *difference* of parallax of the two stars, it is therefore possible that that of A may be somewhat greater.

It will be satisfactory to have the above result confirmed by the measures of distance, though the quantity is almost too small to be so dealt with, being less than the probable error of observation under the most favorable circumstances; and an inspection of the column of distances, though detecting here and there slight traces of parallax, certainly does not show any thing like the regular series observable in the positions.

* The value is, m = — 0·045 ± ·043, or the probable error is nearly equal to the whole quantity; *i. e.* m is probably between 0 and — ·09; but it is evident that an alteration between these limits will scarcely affect the value of x,

The equation of condition for any observed distance will be, $d' = d - \varrho\, x . \cos X + (t - 1853{\cdot}0)\, n$. where d is the mean distance for epoch 1853·0, & n the annual change in distance from proper motion.

The several equations are as follow:—

									Weight.
(1)	d	+	·747 x	−	1·247 n	=	4·657		2
(2)	d	−	·686 x	−	·748 n	=	4·498		2
(3)	d	+	·823 x	−	·270 n	=	4·39		1·5
(4)	d	+	·596 x	−	·212 n	=	4·616		2
(5)	d	+	·421 x	−	·180 n	=	4.58		1
(6)	d	−	·781 x	+	·039 n	=	4·53		1·5
(7)	d	−	·945 x	+	·127 n	=	4·62		1·5
(8)	d	−	·623 x	+	·268 n	=	4·46		2
(9)	d	+	·645 x	+	·776 n	=	4·53		2
(10)	d	−	·786 x	+	1·042 n	=	4·375		2
(11)	d	−	·912 x	+	1·094 n	=	4·45		1·5

The weights assigned are derived from those given in the register by dividing by 7, and taking the nearest integer or half-integer; this was to save the trouble of dealing with large quantities, and the effect on the result will be scarcely sensible.

The solution of the above by least squares gives,

$$x = +\,0''{\cdot}06125 \quad + \cdot399\ n$$
$$d = +\,4{\cdot}525 \quad + \cdot0015\ n$$

The value of n must be very small, not exceeding at most 0''·03; x & d will be therefore but little affected by it; the observations are insufficient to give this value even approximately;* but a comparison with the measures of Herschell and South in 1821 gives − ·024; with those of Struve in 1829, − ·006; and with those of Dawes in 1830, − ·018; assuming it at − ·016 the above results become

$$x = +\,0''{\cdot}0549 \quad \pm \cdot0227$$
$$d = 4{\cdot}525 \quad \pm \cdot0165$$

This value of x agrees sufficiently well with that derived from the positions, the probable error, as might be expected being much larger. The residual errors of each set after correcting for x, m, & n, are exhibited below.

	1	2	3	4	5	6	7	8	9	10	11
Position. in angle	− ·1°04	− ·058	− ·146	− ·082	+ ·299	+ ·176	+ ·058	+ ·024	− ·102	− ·059	+ ·060
Position. in arc	·0''09	·005	·012	·006	·024	·014	·004	·002	·008	·005	·005
Distance.	+ ·0''72	− ·002	− ·184	+ ·056	+ ·029	+ ·048	+ ·149	− ·027	− ·018	− ·090	− ·008

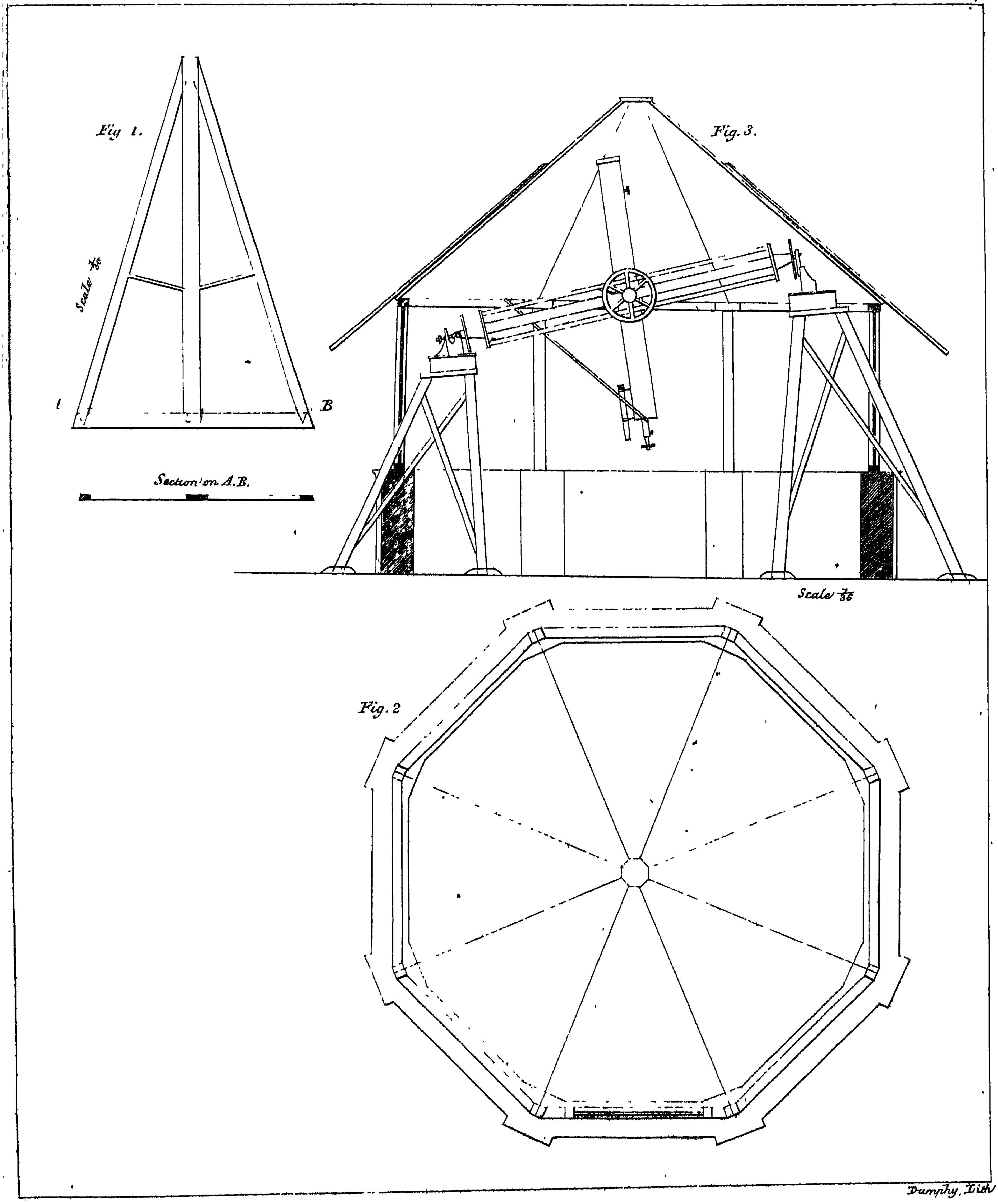
The errors in distance look probable enough, while those in the positions will doubtless appear *improbably* small; the average error of a good night's observation being somewhere about 0''·04, so that the mean of 4 sets might be expected to shew an average of about 0''·02, instead of 0·008 as above; but it must be borne in mind that these observations were taken with unusual care, and under highly favorable circumstances; none being taken unless the definition was unexceptionable, and nearly the whole observed by daylight, a circumstance, according to my experience, remarkably favorable to accuracy.

As it has occurred to me, that the variations in the angles of position might perhaps be attributed to a bias in the Observer's eye, from observing on different sides of the meridian, it may be well to state, that all the observations, excepting those entering into equations 6, 7, 10 & 11 were taken about 1^h or 2^h W. of the meridian; those in the excepted equations were from necessity taken E of the meridian, but they are just the ones which produce the least effect on the result, on account of the co-efficient of x being small; moreover they do not indicate any sensible bias of the kind alluded to. In like manner a periodical change of the distance might be attributed to temperature; but the range of temperature throughout the observations was small, scarcely exceeding 10°, and would also have had an *opposing* effect, from the minimum temperature occurring about the time of least apparent distance; i. e. it would *diminish* the apparent parallax; and in fact we find the parallax derived from the distances somewhat less than that from the positions.

It is, however, to be hoped that the subject will be taken in hand at some other Observatory, so that the above results may be confirmed.

* The value derived from the above equations is, $n = -\cdot081 \pm \cdot029$; from which it can only be inferred that n is probably between ·002 and ·060.

Pl. I.



Dunphy, Lith

Fig. 1.

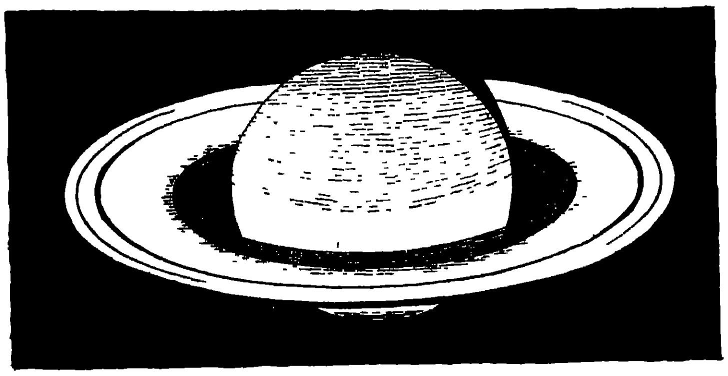
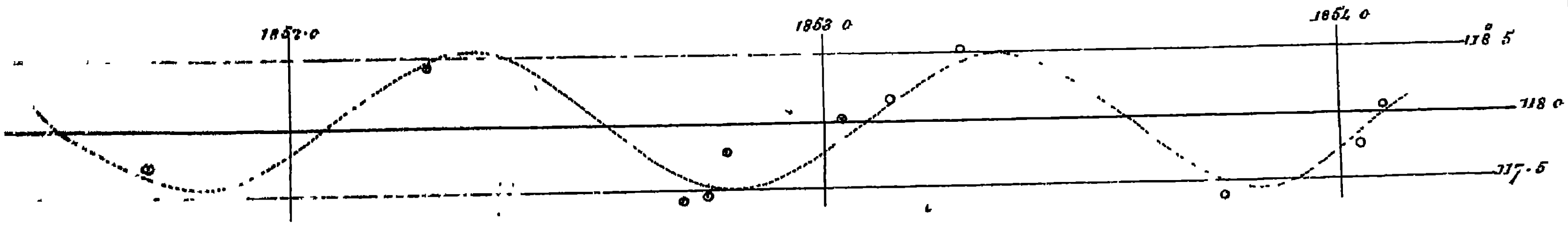


Fig. 5.



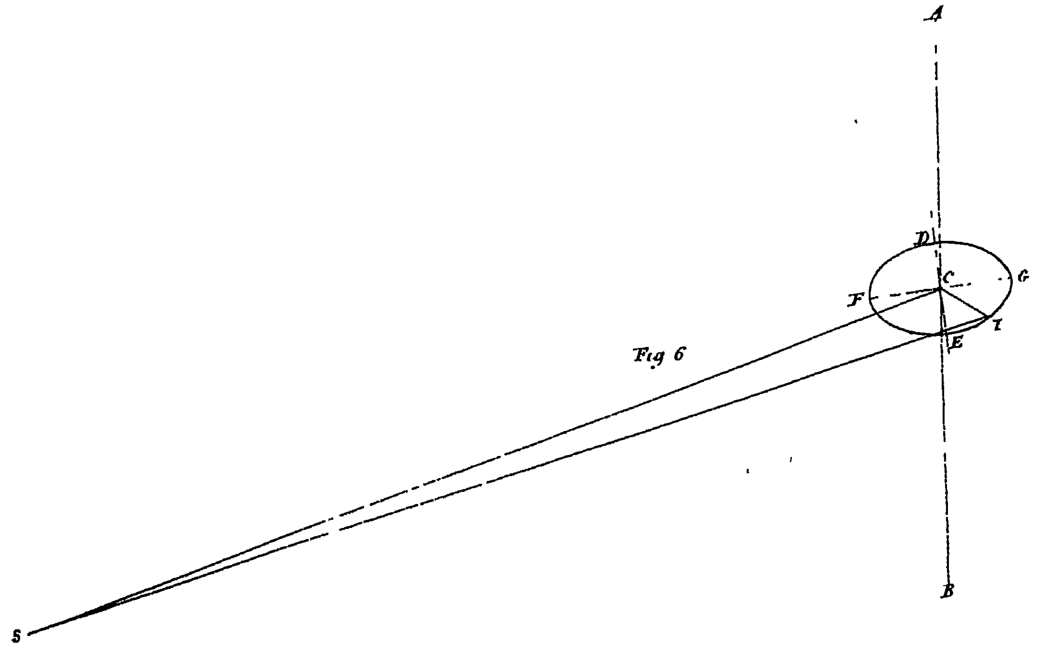


Fig 6

Dumphy, Lith.